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herself, should feel for the Mexican side. The Americans, saith the *Débats*, have not distinguished themselves in warfare on land ; their battle of New Orleans is the only great military exploit they can cite ; and that afforded proof rather of courage and sang froid than knowledge of tactics. Their hostilities in Florida show that they are only middling soldiers ; yet they are unquestionably superior to the Mexicans, and their officers are well taught ; on sea, they seem, however, strong and formidable ; they can at once blockade the ports and stop the revenue of Mexico. The article opens with assigning all right in the case to Mexico, and imputing all wrong to the United States. It proceeds : " We must say roundly that it is the concern and policy of Europe that Mexico should not be dismembered, and should be enabled to prevent fresh encroachments." Here is the end and moral :

“The United States deserve applause for the prosperity they have gained, and good wishes for its prolongation. They form a great nation which cultivates most admirably the soil on which it is planted by Providence, and has opened vast fields to civilization, but the domain allotted to them is quite sufficient to satisfy any ambitious and enterprising people. It is ten times the extent of our France, which nevertheless is a very fine empire. All the acquisitions required to consolidate them, and make them masters of their own possessions, they have already won by force or negotiation. They have the valley of the Mississippi, the Floridas, and all that originally belonged to the Indians. What more have they need of? Have not their twenty millions of people sufficient room

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It was anticipated that, soon after the second consecration of the *entente cordiale* at Eu, there would be an adumbration, from the *Journal des Débats*, of the sentiments and plans mutually adopted in regard to foreign countries and events. The understanding between Lord Aberdeen and Mr. Guizot might embrace Switzerland, Ireland, Greece, Turkey, Spain, the states of La Platte, Tahiti, Mexico, and the United States. We have been the first favored with a semi-official *quasi* manifesto on the return of the minister of Foreign Affairs. The leading article of the *Débats* of the 24th instant relates to "the menaces of war" between Mexico and our Union, the relative weakness of the one party, the limited, secondary belligerent faculties of the other, the inordinacy of the American aims, and the predilection which Europe, mindful of dangers, remote indeed, for

in their vast territories? If the United States knew their own interest, they would be contented with what they have. The civilized world cannot view with indifference their aggrandizement on the Mexican side, for every inch of ground they gain in that direction is so much given up to the infamous institution of slavery. For the political balance of the world the conquest of Mexico by the United States may create eventual dangers, which, though distant, it will not be superfluous to guard against. Europe, therefore, watches with care a great empire which occupies in the east and in the north an immense surface, covered with a population of sixty-two millions, double that of France and that of Austria, and quadruple that of Prussia, and cannot help being filled with the contemplation of another colossus which may occupy the whole space of the Isthmus of Panama, from the mouths of the St. Lawrence to the Columbia river in the Oregon, thus acquiring the disposal of the most productive cultivable lands and the richest mines of the earth, and extremely redoubtable at sea. Between the autocracy of Russia on the east, and the democracy of America thus aggrandized on the west, Europe may find herself more compressed than she may one day think consistent with her independence and dignity. It is not for the interest of Europe that the entirety of America should be in one hand, nor do we think America herself wishes it. Well then! The conquest of Mexico would be a wide step towards the enslavement of the world by the United States, and that a levy of bucklers by the Mexicans at this moment would lead the way to this subjection. There is, therefore, good reason why the public mind should be turned with attention towards what is now passing on the other side of the Atlantic."

Several of the French journals perceived and signalized at once the origin and drift of this appeal to Europe. The *Courrier du Havre* rallied the Débats for seeing only two colossal and portentous powers—Russia and the American Union. Great Britain might have been discerned, and even "modest France herself, if now a little giant, would grow to something when her projects in Africa, Oceania, and elsewhere were realized." The *National* and *La Presse* animadverted on the improvidence of this new aspect of the *entente cordiale*; the *Siècle* (25th instant) equally reproved the cabinet, arguing that France might profit by American aggrandizement long before she could have anything to fear from it; and that Mr. Guizot was only lending himself to the fears of Great Britain (the true colossus) about the Canadas, Oregon, California, and British maritime supremacy. France would never sanction a new intervention and concert such as the article shadowed forth, and its authors might recur with benefit to the arguments against a rupture or jarring with the United States which came from the same oracle when the government wished to settle differences by paying the twenty-five millions of francs indemnity. But the most elaborate and comprehensive direct reply to the Débats appeared in the *Esprit Public*, a new cheap daily paper, with an able editor and the special patronage of Lamartine. Let me indicate the heads of the reply. We now learn more of the extent of the stipulations connected with the seeming concessions in the Treaty of Visit. We have in the accredited organ of the government an article demi-hostile to the United States. This power is charged with despoiling Mexico; and the recognition of Texan indepen-

dence by France and Great Britain is cautiously pretermitted—a measure which the Débats once earnestly commended. Seeing its object—since betrayed—it was real machiavelism. The Débats now stimulates the blind rage of Mexico against the Americans, by charging them with the whole evil, and overlooks all the transactions of Great Britain in relation to Mexico for the twenty-five years past, which should render her more suspicious and odious than the Americans to the impotent victim. Are the British and French flags to be combined against the United States, or is our moral influence merely pledged to our neighbor in the Oregon affair? The enlargements of the Russian and American empires are alone signalized, and with studied significance: but Russian power is, plainly, most formidable to Great Britain, who thinks of Persia—India. American power is the counterpoise to the British overweening pretensions on the ocean and projects of commercial monopoly. Great Britain is at our doors—Russia and America are far enough off. Our lordly and greedy neighbor has tripled her might and sway since 1830. The *Esprit Public* then specifies the British extension and designs in various parts of the East, in Oceania, on the southern coasts of Africa, in Egypt, Syria, South America: "England, with French concurrence or connivance, has assumed the police of all seas and flags; the political centre of Europe is transferred to London, and the Débats would have the world tremble at the annexation of Texas, and at Russian Asiatic progress, alone! We should comprehend such language in the Times and Morning Chronicle; in a French sheet and at Paris, it is insupportable. There is a bold *naïveté* in the manifestation of such a subserviency to our eternal rivals. Until now, there was a seeming or professed neutrality between Great Britain and the United States; the weight, moral weight of France at least, is now openly thrown into the British scale."

HARPER & BROTHERS have issued two numbers of a geographical work, for which we desire, and doubt not, an abundant success, *Morse's Cero-graphic Maps*. These are in the form of a large Atlas, and are sold at 25 cents a number, being only 64 cents for each map.

Blair's Sermons, a handsome octavo volume of matter which has long retained its popularity.

A very handsome volume has been sent to us, called, "*Elements of Geology for Schools and Colleges*," by Dr. Ruschenberger, of the U. S. Navy. It contains 300 well executed cuts, and cannot fail to be popular as well as instructive. It is part of a series of first books on Natural History, and we see from the advertisements, that teachers and school committees at the South and West, have greatly praised them. The seven books which have preceded this we have not seen, but they are—Anatomy and Physiology, Mammalogy, Ornithology, Herpetology and Ichthyology, Conchology, Entomology, and Botany. We cannot be wrong in directing the attention of parents and teachers to this series. Dr. R. is the author of a "*Voyage Round the world*," published several years ago.

From the Edinburgh Philosophical Journal.

HOT SPRINGS AND VOLCANOES.

Carbonic Acid and Sulphureous Acid Springs—Cold Springs—Hot Springs—Mud Volcanoes—Volcanoes. By BARON ALEXANDER VON HUMBOLDT.*

HAVING now taken a general survey of the activity, that is, of the internal life of the globe, in its heat, in its electro-magnetic tension, in its luminous emanations at the poles, in its irregularly-recurring phenomenon of motion, we come to chemical changes in the crust of the earth, and in the composition of the atmosphere, which are, in like manner, the consequence of planetary vital activity. From the ground we see effusions of watery vapor and of gaseous carbonic acid, mostly free from all admixture of azote; of carburetted hydrogen gas, in the Chinese province of Sse-tschuan, for thousands of years, and in the state of New York, where, in the village of Fredonia, it has lately been employed for economical purposes in heating and lighting;† of sulphuretted hydrogen gas, of sulphur fumes, and, more rarely, of sulphureous and hydro-chloric acid vapors. Such emanations from fissures in the ground, do not only indicate the dominion of volcanoes long extinct or still burning; they are farther observed exceptionally in districts in which neither trachyte nor any other volcanic rock appears at the surface. In the Andes of Quindiu, I have seen sulphur precipitated from hot sulphureous vapors issuing out of mica-slate, at a height of 6410 feet above the level of the sea; whilst the same, and, as it used to be regarded, primitive rock, in Cerra Cuelo, near Tiesan, south of Quito, exhibits an enormous bed of sulphur in pure quartz.

Of all the gaseous springs which the earth

*This extract from *Cosmos*, (English edition by Baillière,) at present in course of publication, is slightly altered and enlarged.

†*Carburetted Hydrogen Spring at Fredonia.*—Sailed in a steamboat to Fredonia, a town of 1200 inhabitants, with neat white houses, and six churches. The streets are lighted up with *natural gas*, which bubbles out of the ground, and is received into a gasometer, which I visited. This gas consists of *carburetted hydrogen*, and issues from a black bituminous slate, one of the beds of the Hamilton group of the New York geologists, or part of the Devonian formation of Europe. The lighthouse-keeper at Fredonia told me, that, near the shore, at a considerable distance from the gasometer, he bored a hole through this black slate, and the gas soon collected in sufficient quantity to explode, when ignited.—*Travels in North America.* By Charles Lyell. Vol. ii., p. 89.

Burning Spring of Niagara.—At the falls of Niagara, where we next spent a week, residing in a hotel on the Canada side, I resumed my geological explorations of last summer. Every part of the scenery, from Grand Island above the falls, to the ferry at Queenstown, seven miles below, deserves to be studied at leisure.

We visited the "burning spring" at the edge of the river above the rapids, where carburetted hydrogen, or, in the modern chemical phraseology, a light hydro-carbon, similar to that before mentioned at Fredonia, rises from beneath the water out of the limestone rock. The bituminous matter supplying this gas is probably of animal origin, as this limestone is full of marine mollusca, crustacea, and corals, without vegetable remains, unless some fucoids may have decomposed in the same strata. The invisible gas makes its way in countless bubbles through the clear transparent waters of the Niagara. On the application of a lighted candle, it takes fire, and plays about with a lambent flickering flame, which seldom touches the water, the gas being, at first, too pure to be inflammable, and only obtaining sufficient oxygen after mingling with the atmosphere at the height of several inches above the surface of the stream.—*Lyell's Travels in North America*, vol. ii., p. 90.—*Edit. of Phil. Journal.*

pours forth, those of carbonic acid (mofetten) are still, at the present time, the most important, both in number and extent. Germany, in her deep-cut valleys of the Eifel, in the neighborhood of Lake Lach, in the Kesselthal of Wehr, and in Western Bohemia, as also in the burning foci of the primeval world, or their vicinity, shows us these effusions of carbonic acid as a kind of last effort of volcanic activity. In former epochs, where, with a higher temperature of the earth, and the frequency of fissures yet unfilled, the processes which we are here describing proceeded more actively where carbonic acid gas and watery vapors were mingled with the atmosphere in larger quantities than at present, the youthful vegetable world, as Adolph Brongniart has acutely observed, must have attained almost everywhere, and independently of geographical position, to the most rank luxuriance and evolution of its organs. In the ever hot, ever moist atmosphere, surcharged with carbonic acid, vegetables must have found such vital excitement, such superfluity of nourishment, as enabled them to supply the material of those beds of coal and lignite, the exhaustion of which it is difficult to conceive, and which now serve as foundations for the physical strength and the welfare of nations.* Such beds are princi-

*In Lyell's interesting *Travels in North America*, already quoted, we meet with the following remarks on the quantity of carbonic acid in the atmosphere, in which the plants of the coal formation flourished:—"Before concluding the remarks, which are naturally suggested by a visit to the Great Dismal, I shall say a few words on a popular doctrine, favored by some geologists, respecting an atmosphere highly charged with carbonic acid, in which the coal plants are supposed to have flourished. Some imagine the air to have been so full of choke damp during the ancient era alluded to, that it was unfitted for the respiration of warm-blooded quadrupeds and birds, or even reptiles, which require a more rapid oxygenation of their blood than creatures lower in the scale of organization, such as have alone been met with hitherto in the carboniferous and older strata. It is assumed, that an excess of oxygen was set free when the plants which elaborated the coal subtracted many hundred million tons of carbon from the carbonic acid gas which previously loaded the air. All this carbon was then permanently locked up in the solid seams of coal, and the chemical composition of the earth's atmosphere essentially altered.

But they who reason thus are bound to inform us what may have been the duration of the period in the course of which so much carbon was secreted by the powers of vegetable life; and, secondly, what accession of fresh carbonic acid did the air receive in the same. We know that, in the present state of the globe, the air is continually supplied with carbonic acid from several sources, of which the principal are, *first*, The daily putrefaction of dead animal and vegetable substances; *secondly*, The disintegration of rocks charged with carbonic acid and organic matter; and, *thirdly*, The copious evolution of this gas from mineral springs and the earth, especially in volcanic countries. By that law, which causes two gases of different specific gravity, when brought into contact, to become uniformly diffused and mutually absorbed through the whole space which they occupy, the heavy carbonic acid finds its way upwards through all parts of the atmosphere, and the solid materials of large forests are given out from the earth in an invisible form, or in bubbles rising through the water of springs. Peat mosses of no slight depth, and covering thousands of square miles, are thus fed with their mineral constituents, without materially deranging the constituents of the atmosphere breathed by man. Thousands of trees grow up, float down to the delta of the Mississippi and other rivers, and are buried, and yet the air, at the end of many centuries, may be as much impregnated with carbonic acid as before.

Coral reefs are, year after year, growing in the ocean; springs and rivers feed the same ocean with carbonic acid and lime; but we have no reason to infer, that when mountain masses of calcareous rock have thus been grad-

pally contained in basins, and are peculiar to certain parts of Europe. They are abundant in the British Isles, in Belgium, in France, on the Lower Rhine, and in Upper Silesia. In the same primeval times of all-pervading volcanic action, too, must those enormous quantities of carbonaceous matter have issued from the bowels of the earth, which all the limestone rocks contain, and which, separated from oxygen, and represented in the solid form, composes about an eighth part of the absolute bulk of those mountain masses. The carbonic acid which the atmosphere still contained, and which was not absorbed by the alkaline earths, was gradually consumed by the vegetation of the primeval world; so that the atmosphere, purified by the processes of vegetable life, by and by contained no more of the gas than was uninjurious to the organization of such animals as people the earth at the present time. Sulphurous or sulphuric acid vapors, too, occurring more frequently, and much more abundantly, then than now, occasioned the destruction of the inhabitants of the inland waters—mollusca and numerous genera of fishes, as well as the formation of the strangely contorted beds of gypsum, which have often, apparently, been shaken by earthquakes.

Under precisely similar physical relations, there were further thrown out from the bosom of the earth various gases and liquids, mud, and, from the eruption cones of volcanoes, which are but a species of intermitting springs, streams of molten earths. All these matters owe their temperature, and the nature of their chemical constitution, to the place of their origin. The mean temperature of ordinary springs is lower than that of the atmosphere where they appear, when the water is derived from high levels; their temperature increases with the depth of the strata with which they come in contact at their origin. The numerical law of this increase has been stated above. The mixture of the waters, which come from the mountain elevations, or from the depths of the earth, renders the position of the isogeothermal lines, or lines of equal internal heat of the earth, difficult of determination, when the conclusion has to be come to from the temperature of springs as they rise. So, at least, did I and my friends find it in some experiments which we made in Northern Asia. The temperature of springs, which has been so constant an object of physical investigation for the last half century, depends, like the height of the line of perpetual snow, on numerous and highly complex causes. It is a function of the temperature of the stratum in which they have their origin, of the capacity for heat of the ground, and of the quantity and temperature of the atmospheric or meteoric water

ually formed in the sea, any essential change in the chemical composition of its waters has been brought about. We have no accurate data, as yet, for measuring, whether in our own time, or at any remote geological era, the relative supply and consumption of carbon in the air or the ocean, causes the amount of those elements to vary greatly; but the variation, if admitted, would not have caused an excess, but rather a deficit, of carbon, in the periods most productive of coal or peat, as compared to any subsequent or antecedent epochs. In fact, a climate favoring the rank and luxurious growth of plants, and, at the same time, checking their decay, and giving rise to peat or accumulations of vegetable matter, might, for the time, diminish the average amount of carbonic acid in the atmosphere—a state of things precisely the reverse of that assumed by those to whose views I am now objecting.—*Travels in North America.* By Charles Lyell. Vol. i., p. 150.—*Edit. of Phil. Journal.*

that falls; which last, again, according to the mode of its origin, differs in its temperature from that of the lower strata of the atmosphere.

Cold springs, as they are called, can only give the mean temperature of the air, if unmixed with water that is rising from great depths, or that is descending from considerable heights, and when they have flowed for a very long way under the surface—in our latitudes from 40 to 60 feet, in the equinoctial zone, according to Boussingault, one foot. These depths are those, in fact, of the stratum of rock in which, in the temperate and torrid zone respectively, the point of invariable temperature begins, in which the hourly, diurnal, or monthly variations in temperature of the air are no longer perceived.

Hot springs burst out of the most diversified mineral strata; the hottest of all the permanent springs which have yet been observed, and which I myself discovered, flow remote from all volcanoes. I here refer to the Aguas calientes de Las Trincheras between Porto Cabello and New Valencia, in South America, and to the Aguas de Comangillas, near Guanajuato, in Mexico. The first spring issuing from granite, indicated 90.3° C.; the second, which issues from basalt, showed 96.4° C. The depth of the source of water of these temperatures, from what we know of the law of increase of temperature in the interior of the earth, must probably be about 6700 feet (more than half a geographical mile.) If the cause of the heat of thermal springs, as well as of active volcanoes, be the universally diffused heat of the earth, then would rocks produce an effect only through their capacity for, and their power of, conducting heat. The hottest of all the permanent springs, those, namely, from 95° to 97° C. (204° to 207.6° F.) it is remarkable, are the purest, are those that contain the smallest quantity of mineral matter in solution. Their temperature appears, on the whole, to be less permanent than that of springs between 50° and 74° C., the invariableness of which, both in regard to temperature and mineral impregnation, has been maintained so wonderfully, within the confines of Europe at least, during the last fifty or sixty years, *i. e.* since accurate thermometrical observations and chemical analyses were made. Boussingault found that the thermal springs of Las Trincheras had risen in temperature, in the course of twenty-three years (from 1800, when my journey was performed, to 1823,) from 93.3° to 97° C. This very smoothly-flowing spring is, consequently, at this time 7° C. higher in temperature than the intermitting Geyser and Strokr, the temperature of which has been lately more carefully ascertained by Krug of Nidda. One of the most remarkable proofs of the origin of these hot springs being due to the percolation of cold meteoric water into the interior of the earth, and its contact there with a volcanic focus, was presented in the preceding century, in connection with the volcano of Jorullo in Mexico, which was unknown to geography till after my South American journey. When this mountain suddenly made its appearance in September, 1759, rising to a height of 1580 feet above the surrounding level, the two small streams Rios de Cuitimba y de San Pedro disappeared; but some time afterwards they made their appearance again, under the dreadful shocks of an earthquake, as hot springs. In 1803, I found their temperature 65.8° C.

The springs of Greece still flow apparently in the same places as they did in the times of Helle-

nic antiquity. The spring of Erosinos, two leagues south of Argos, in the declivity of Chaon, is even mentioned by Herodotus. At Delphi, the Cassotis (the so-called Wells of St. Nicholas) still rises to the south of the Lesche, and flows under the Temple of Apollo; the Castalia, too, at the foot of Phœtriadæ, and the Pirene at Acrocorinth, are there, as well as the hot baths of Ædepsos in Cubæa, in which Sulla bathed at the time of the Mithridatic war. I gladly adduce these particulars, because they forcibly remind us how, in a country exposed to earthquakes so frequent and so violent, the interior of our planet has been able to preserve its spring canals unaltered for 2000 years at least. The Fontaine Jaillissante of Lillers, in the department of the Pas de Calais, was bored in the year 1126, and ever since then has the water flowed uninterruptedly to the same height, and in the same quantity. The excellent geographer of the Caramanian coasts, Captain Reaufort, moreover, observed the same flame, fed by a stream of inflammable gas, which flows out in the district of Phaselis, which Pliny describes as the flame of Chimæra in Lycia.

The observations made by Arago in 1821, that the deeper Artesian wells are the warmer, was the first means of throwing a great light upon the origin of thermal springs, and led to the discovery of the law of the increase of the temperature of the earth according to the depth. It is remarkable, and only noticed in very recent times, that St. Patricius, probably Bishop of Pertusa, was led to a very correct view of the phenomenon which presented itself in the appearance of hot springs near Carthage, at the end of the third century. When questioned as to the cause of the boiling-hot water which poured out from the earth, he answered:—"Fire is nourished in the clouds, and in the interior of the earth, as Etna, and another mountain in the neighborhood of Naples, inform you. The subterranean waters rise as through syphons; and the cause of the heat of hot springs is this: the waters that are more remote from the subterraneous fire show themselves colder; those that flow in closer proximity to the fire, warmed by it, bring an insupportable heat to the surface which we inhabit."

As earthquakes are frequently accompanied by eruptions of water and watery vapor, so do we perceive in the sales, or the small mud-volcanoes, a transition from the alternating phenomena presented by jets of vapor and thermal springs to the great and frightful activity of hills that vomit forth lava. If these, as springs of melted mineral matter, produce volcanic rocks, so do the thermal springs that are charged with carbonic acid and sulphurous gas, (and earthy matters,) produce, by incessant precipitation, either horizontal beds of limestone, (travertin,) or they form conical hillocks, as in the north of Africa, (Algeira,) and the Banos of Caxamarea, on the western declivity of the Peruvian Andes. In the travertin of Van Dieman's Land, not far from Hobart Town, there are contained, according to Mr. Charles Darwin, the remains of an extinct flora. By lava and travertin, two species of rock, the production of which goes on under our eyes, we here indicate the grand antithesis in geognostical relations.

Mud-volcanoes (salsen) deserve a greater share of attention than geologists have hitherto bestowed upon them. The extent of the phenomena has been overlooked, because in the two states in which it presents itself to us, the one of repose is that which has been principally dwelt upon; and

in this state of repose mud-volcanoes often continue for centuries. The production of mud-volcanoes is accompanied by earthquakes, subterranean thunder, the elevation of a whole district of country, and the eruption of flames, which rise high, but last only for a short time. When the mud-volcano of Iokmali made its appearance in the peninsula of Abscheron, eastward from Baku, on the Caspian Sea, (on the 27th of November, 1827,) flames burst forth, and blazed up to an extraordinary height for a period of three hours; for the next succeeding twenty hours they scarcely rose three feet above the surface of the crater that discharged the mud. The column of flame mounted to such a height near the village of Baklichi, westward from Baku, that it was seen at the distance of six (German) miles. Great blocks of stone, torn from their foundations beneath, were scattered widely around. Similar blocks are observed about the now slumbering mud-volcanoes of Monte Zibio, near Sassuolo, in the north of Italy. The second state, or that of activity, has continued for 1500 years in the mud volcano of Girgenti, (Maccalubi,) in Sicily, which is described by the ancients. Many conical hillocks, of eight, ten, and even thirty feet high, though the height, as well as the form, of these varies at different times, are there seen arranged near one another. From the superior very small basin, which is full of water, along with the periodic escapes of gas, there are periodic streams of clayey mud discharged. The mud of these volcanoes is generally cold, but occasionally, as at Damak, in the province of Samarang, island of Java, it is of high temperature. The gases, which escape with a rushing noise, are also of different kinds—hydrogen gas, mixed with naphtha; carbonic acid; and, as Parrot and I ascertained, (in the peninsula of Taman and the South American Volcanitos de Turbaco,) almost pure nitrogen gas.

Mud-volcanoes, after the first forcible outburst of flame, which perhaps is not common to all in the same measure, present the observer with a picture of an activity of the interior of the earth, that proceeds incessantly but feebly. The communication with the deep strata, in which a high temperature prevails, is speedily interrupted again; and the cold discharges of mud-volcanoes seem to indicate that the seat of the phenomenon, in its state of continuance, cannot be very remote from the surface. The reaction of the interior of the earth upon its outer crust is exhibited in a very different degree of force in the proper volcanoes, or burning mountains; in other words, in those points of the earth where a permanent communication, or, at all events, a communication that is renewed from time to time, is established between the surface and the deep focus of ignition. We must carefully distinguish between more or less exaggerated volcanic phenomena, such as earthquakes, hot springs and jets of steam, mud-volcanoes, the rising up of bell and dome-shaped unopened trachytic mountains, the opening of these mountains, or the upheaval of basaltic beds as craters of elevation, lastly, the rise of a permanent volcano within the crater of elevation itself, or amongst the fragments of its previous constitution. At different times, along with different degrees of activity and force, permanent volcanoes throw out jets of aqueous vapor, acids, glowing ashes and scoræ, and, when the resistance can be overcome, ribbon-shaped small fiery streams of melted earthy matter.

As a consequence of a great but local manifes-

tation of force in the interior of our planet, elastic vapors raise either single parts of the crust of the earth into dome-shaped, unopened masses of felspathic trachyte and dolerite, (Puy de Dôme and Chimborazo,) or the upheaved strata are broken through, and inclined outwards, in such wise, that upon the opposite inner aspect a steep rocky edge is produced. This edge then becomes the boundary of a crater of elevation. When this has risen from the bottom of the sea, which does not, by any means, happen in every case, it then determines the whole of the characteristic physiognomy of the upheaved island. This is the origin of the circular form of Palma, which Leopold von Buch has described so carefully and so ably, as well as of Nisyros, in the *Ægean Sea*. Occasionally, one-half the ring-like edge is destroyed: and in the bay which the sea that has flowed in then forms, the social coral polypi establish themselves, and produce their cellular dwellings. Craters of elevation on continents are also frequently found filled with water, when they contribute to beautify the landscape in a peculiar manner.

Their origin is not connected with any particular mountain rock; they break out in basalt, trachyte, leucitic porphyry, (Somma,) or in doleritic aggregates of augite and Labrador. Hence the very dissimilar natures and external forms of this kind of crater edge. "No eruptive phenomena take place from such boundaries. Through them there is no permanent channel of communication established with the interior; and it is only very rarely that traces of still active volcanic power are discovered in the precincts, or within the circuit of such craters. The force competent to bring about such important effects, must long have accumulated, and gained strength in the interior, before it could have overcome the resistance of the superincumbent masses. On the formation of new islands, it raises up granular rocky masses and conglomerates (layers of tufa full of marine plants) above the level of the sea. Compressed gases escape through the crater of elevation; but a mass of such magnitude, thus upheaved, sinks down again, and closes forthwith the openings, which are only formed for such manifestations of force. No volcano is produced."

A proper volcano only arises where a permanent connection is established between the interior of the earth and the atmosphere. Here the reaction of the interior upon the exterior proceeds for lengthened periods. It may, as in the case of Vesuvius, (Fisove,) be interrupted for centuries, and exhibit itself anew with renovated vigor. In the time of Nero, it was already customary, in Rome, to rank *Ætna* among the number of the gradually expiring volcanic mountains; *Ælian*, indeed, at a later period, maintained that the seamen began to see the sinking summit at a less distance on the high seas than formerly. Where the evidence of the eruption—I might say the old scaffolding—has been perfectly preserved, the volcano shows itself rising from a crater of elevation; there a high rocky wall, a rampart of greatly inclined strata, surrounds the isolated cone in the manner of a circus. Sometimes there is not a trace of this circus-like enclosure visible; and the volcano, not always conical in figure, then arises as an elongated ridge immediately from the elevated platform. This is the case with *Pichincha*, at the foot of which stands the city of *Quito*.

As the nature of mountain rocks, in other words, the combination or grouping of simple min-

erals into granite, gneiss, and mica-slate, into trachyte, basalt, and dolerite, independently of present climates, and under the most dissimilar zones, is still the same; so do we everywhere observe the same laws of formation proclaiming themselves in the realm of inorganic nature, laws according to which the strata of the crust of the earth stand in a certain relationship to one another, and under the influence of elastic forces, break through one another as dikes. This recurrence of the same phenomena is particularly striking in volcanoes. When the navigator, among the islands of distant seas, finding himself surrounded by palms and strange forms of vegetation, and no longer sees the same stars, in the individualities of the landscape, he still traces the characters of Vesuvius, the dome-shaped summit of *Auvergne*, the crater of elevation of the *Canaries* and *Azores*, the fissures of eruption of *Iceland* repeated and reflected. A glance at the attendant of our planet, the moon, generalizes still farther the analogy of formation here adverted to. In maps of the moon, we observe in our satellite, without atmosphere and without water, vast craters of elevation, which surround conical mountains, or support them on their circular walls; unquestionable effects of the reaction of the interior of the moon upon her exterior, aided by the influence of diminished gravity.

If, in many languages, volcanoes are properly designated *Burning Mountains*, it would still be a great mistake to suppose that they were produced by any gradual accumulation of the streams of lava that have flowed from them: their origin appears to be much more generally the consequence of a sudden upheaval of tenacious masses of trachyte, or augitic rock, including polychromatic [Labrador] felspar. The measure of the upheaving force reveals itself in the height of the volcano; and this is so different, that in one case it is a mere hillock (as in *Cosima*, one of the *Japanese Kuriles*;) in another, it is a cone that rises to an elevation of 18,000 feet. It has seemed to me as if the relative height had a great influence upon the frequency of the eruptions; as if these were much more common in the lower than the loftier volcanoes. I will call attention to the following series:—*Stromboli*, (2175 feet high,) *Guacamayo*, in the province of *Quiros*, which thunders almost every day, (I have frequently heard it in *Chilo*, near *Quito*, at a distance of 22 German miles,) *Vesuvius*, (3637 feet high,) *Ætna*, (10,200 feet high,) the *Peak of Teneriffe*, (11,424 feet high,) and *Cotopaxi* (17,892 feet high.) If the focus of these several volcanoes be at the same depth below the surface, a greater force will be required to raise the molten masses to a six or eight times higher level. Whilst the low *Stromboli* (*Strongyle*) has labored incessantly, at least since the times of the *Homer* traditions, and serves as a light-house to the *Tyrrhenian Sea*, guiding the seaman with its fiery signal on his course, the more lofty volcanoes are characterized by lengthened periods of repose. The eruptions of the greater number of the colossal volcanoes that crown the *Andes*, occur at intervals almost of a century apart; where exceptions to this rule have been observed—and I long ago directed attention to them—they may probably be connected with the circumstance, that the communication between the volcanic focus and the crater of erup-

* *Vide Jameson's Edin. Phil. Journal* for an interesting account of *Cosima*, communicated by *Tilesius*.

tion is not, and cannot be conceived to be, equally or permanently free in every volcano at all times. In the less elevated volcanoes the channel of communication may be closed for a season; so that their eruptions become rarer, without their being, on this account, any nearer to extinction.

With the consideration of the relation between the absolute height of volcanoes, and the frequency of their activity, in so far as this is externally visible, the place at which the lava flows out is closely connected. Eruptions from the crater are extremely rare in the case of many volcanoes; they generally proceed from the lateral fissures, (as noticed by the celebrated historian, Bembo, in the sixteenth century, whilst yet a youth,) at places where the flanks of the uplifted mountain, in consequence of their shape and position, offer the least amount of resistance. Upon these fissures cones of eruption are occasionally raised. The larger of these are of such dimensions that they are often erroneously designated by the title of new volcanoes. Ranked side by side, they show the direction of a fissure which has again become closed: the smaller ones frequently occur in groups, closely set together, and cover whole districts, as it were, with bell-shaped, or beehive-like, elevations. To the latter class belong the *hornitos* of Jorullo, and the cone of the eruption of Vesuvius of October, 1822, of the volcano of Awatscha, according to Postels, and of the lava field near the Baidare mountains, in the peninsula of Kamtschatka, according to Erman.

When volcanoes do not rise free and isolated from a plain, when, on the contrary, they are surrounded by table-lands from 9,000 to 12,000 feet* high, as in the double chain of the Andes of Quito, this circumstance may very well give rise to the fact that the most violent eruptions, when red-hot ashes and scoriae are thrown out with detonations that are heard for hundreds of miles around, are never accompanied with *streams of lava*. This is the case with the volcanoes of Popayan, of the lofty plains of Los Pastos, and of the Andes of Quito; the single volcano of Antisana, among the latter, perhaps excepted.

The height of the *cone of ashes*, and the dimensions and form of the *crater*, are the elements in the figure of volcanoes which more particularly impress upon each of them an individual character; but of these elements, both the cone and the crater are perfectly independent of the magnitude of the whole mountain. Vesuvius is not one third of the height of the Peak of Teneriffe, yet its cone of ashes forms one third of the whole height of the mountain, whilst the cone of ashes of the peak is only one twenty-second of the entire elevation. In the case of another volcano of much greater height than the peak, that of Rucu-Pinchicha, namely, the relations come nearer to those of Vesuvius. Of all the volcanoes I have seen in either hemisphere, Cotopaxi is that of which the conical form is the most regular and beautiful. A sudden melting of the snow of its cone of ashes indicates the proximity of an eruption. Before there is even any smoke visible in the attenuated strata of the atmosphere that surround the summit of the crater's mouth, the walls of the ash-cone are sometimes heated through, when the entire mountain presents the most threatening and ill-omened aspect.

* French feet in this and every other instance in the present paper.

The crater which, except in very rare cases, occupies the summit of the volcano, forms a deep, and often accessible, basin-shaped valley, whose bottom is subject to incessant changes. The greater or less depth of the crater is, in many volcanoes, an indication of the proximity or remoteness of an eruption. In the basin-shaped crater, extensive fissures open and close again alternately, through which vapors of various kinds find vent, or small, rounded, and fiery openings, filled with molten matters are seen. The floor rises and falls, and in it are formed hillocks of ashes and cones of eruption, which occasionally rise high above the edges of the crater, and give the volcano its characteristic physiognomy for years; but, on the occurrence of fresh eruptions, they sink suddenly down and disappear. The openings of these cones of eruption, which rise from the floor of the crater, must not, as is too frequently done, be confounded with the crater itself, which encircles them. When the crater is inaccessible, from its vast depth, and the perpendicular inward slope of its sides, as in the case of Rucu-Pinchicha, (14,946 feet high,) one can still look down from the edges upon the summits of the monticules which rise within the cauldron-like crater, partially filled with sulphureous vapor. A more wonderful or grander natural prospect I have never enjoyed. In the interval between two eruptions, the crater of a volcano may exhibit no luminous phenomenon, but merely open fissures and jets of watery vapor; or hillocks of ashes, that can be approached without danger, are found upon its scarcely-heated bottom. These often gratify the wandering geognost, without making him run any risk, by casting out glowing masses, which fall on the edges of the cone of scoriae, their appearance being regularly announced by slight, and entirely local, shocks—earthquakes on a small scale. Lava occasionally flows from open fissures, or small fiery gorges, into the crater itself, without bursting through its walls, or overflowing its edges. But if it does break through, the molten spring generally flows smoothly, and in such a determinate direction, that the great cauldron-like valley, called the crater, can still be visited during the period of the eruption. Without a particular description of the form, and also of the normal structure of burning mountains, phenomena cannot be rightly comprehended which have been distorted by fantastical descriptions, and the various significations attached to the words, *Crater*, *Cone of eruption*, and *Volcano*; or rather, to the indefinite and indeterminate use of these words. The edges of the crater sometimes show themselves much less liable to change than might be expected. A comparison of De Saussure's measurements with my own, yields the remarkable result, in connection with Vesuvius at least, that the northwest edge of the volcano, the Rocca del Palo, may be regarded as having remained for forty-nine years (1773—1822) almost without change in its elevation above the level of the sea. Any difference that appears may be looked on as within the possible errors of measurement.

Volcanoes whose summits reach far above the limits of perpetual snow, like those of the Andes, present a variety of peculiar features. The sudden melting of the snow in the course of an eruption, not only occasions destructive floods, torrents in which heaps of smoking ashes are floated away on blocks of ice; but the accumulation of ice and snow goes on producing its influence uninterruptedly, and by filtration, into the trachytic rocks,

even whilst the volcano is perfectly quiescent. Caverns are thus gradually formed on the declivities or at the foot of the burning mountain, and these become subterraneous reservoirs of water, which communicate in various ways, by narrow mouths, with the alpine rivulets of Quito. The fishes of these alpine streams multiply greatly, particularly in the gloom of the caverns; and then, when the earthquakes come, which precede all eruptions of volcanoes in the Andes, and the whole mass of the mountain is shaken, the subterraneous caverns at once give way, and pour out a deluge of water, fishes, and tufaceous mud. This is the singular phenomenon which the presence of the *Pimelodes Cyclopum*, the *Prenadilla* of the inhabitants of the lofty plains of Quito, attests. When, in the night between the 19th and 20th of June, 1698, the summit of Carguairazo, a burning mountain 18,000 feet high, crumbled together, so that no more than two enormous rocky horns of the crater's edge remained, the country, for nearly two square miles, was desolated with liquid tuff and argillaceous mud, (lodazales,) enclosing dead fishes. In like manner the putrid fever of the mountain town, Ibarra, to the north of Quito, which occurred seven years before, was ascribed to an eruption of fish from the volcano *Imbaburnu*.

Water and mud, which, in the volcanoes of the Andes, do not pour down from the crater itself, but from cavities in the trachytic mass of the mountains, ought not, consequently, in the strict sense of the phrase, to be reckoned among the number of proper volcanic phenomena. They are only mediately connected with the activity of volcanoes, nearly in the same measure as the irregular meteorological process, which, in my early writings, I have spoken of under the title of the *Volcano Storm*. The hot watery vapor which rises from the crater, and mingles with the atmosphere during the eruption, forms a cloud as it cools, with which the column of ashes and fire, many thousand feet in height, is surrounded. So sudden a condensation of vapor, and the production of a cloud of enormous superficial dimensions, increase the electrical tension, as Gay Lussac has shown. Forked lightnings dart from the column of ashes, and the rolling thunder of the volcanic storm is then plainly distinguished from the rumbling in the interior of the mountain. This was well observed towards the end of the eruption of Vesuvius, in the month of October, 1822. The lightning, which proceeded from the volcanic steam-cloud of the Katlagia burning mountain in the island of Iceland, according to Olafsen's account, upon one occasion, (17th October 1775) killed eleven horses and two men.

THE STEPMOTHER.

From Village Paupers and other Poems, by G. W. FULCHER.

"She saw me weep, and asked in high disdain,
If tears would bring my mother back again?"

WELL, I will try and love her then,
But do not ask me yet:
You know my *own* dear dead mamma
I never must forget.

Don't you remember, dear papa,
The night before she died
You carried me into her room?
How bitterly I cried!

Her thin white fingers on my head
So earnestly she laid,

And her sunk eyes gleamed fearfully,
I felt almost afraid.

You lifted me upon the bed,
To kiss her pale cold cheek;
And something rattled in her throat,
I scarce could hear her speak.

But she did whisper—"When I am gone
Forever from your sight,
And others have forgotten me,
Don't *you* forget me quite!"

And often in my dreams I feel
Her hand upon my head,
And see her sunken eyes as plain
As if she were not dead.

I hear her feeble well-known voice
Amidst the silent night,
Repeat her dying words again—
"Don't *you* forget me, quite!"

It sometimes wakes me, and I think
I'll run into her room,
And then I weep to recollect
She's sleeping in the tomb.

I miss her in our garden walks;
At morn and evening prayer;
At church—at play—at home—abroad,
I miss her everywhere:—

But most of all, I miss her when
The pleasant daylight's fled,
And strangers draw the curtains round
My lonely little bed!—

For no one comes to kiss me now,
Nor bid poor Anne—"Good night!"
Nor hear me say my pretty hymn;
I shall forget it quite!

They tell me *this* mamma is rich,
And beautiful, and fine;
But will she love you, dear papa,
More tenderly than mine?

And will she, when the fever comes
With its bewildering pain,
Watch night by night your restless couch
Till you are well again?

When first she sung your favorite song,
"Come to the Sunset Tree,"
Which my poor mother used to sing,
With me upon her knee:—

I saw you turn your head away:
I saw your eyes were wet;
'Midst all our glittering company,
You do not quite forget!

But must you never wear again,
The ring poor mother gave!
Will it be long before the grass
Is green upon her grave?

He turned him from that gentle child,
His eyes with tears were dim,
At thought of the undying love,
Her mother bore to him!

He met his gay, his beauteous bride
With spirits low and weak,
And missed the kind consoling words
The dead was wont to speak.

Long years rolled on; but hope's gay flowers
Blossomed for him in vain;
The freshness of life's morning hours
Never returned again!

From the Edinburgh Philosophical Journal.

On the Diluvial Epoch. By Professor F. J. PICTET of Geneva.

THE examination of a considerable number of fossil bones from the caves of France, and of the bones found in the gravel of the environs of Geneva, as well as a comparison of the different memoirs published on the organic remains of the diluvial epoch, have led me to form a different opinion from that generally entertained on this subject.

The diluvial formation is commonly regarded as separated from the modern epoch by characters as decided as those which distinguish the three divisions of the tertiary period. The naturalists who believe absolutely in the peculiarity of the species of the different formations (and, for my own part, I am of opinion that everything tends to show that this law is to be considered as demonstrated) think that the order of events was the same in the diluvial epoch as in the others; that is to say, that at the end of that period all the species became extinct, and that a new creation repopulated the earth at the commencement of the modern epoch.

The study of the facts does not appear to me to justify this conclusion; and, on the contrary, I think that the diluvial epoch ought to be united with the modern epoch. I believe that there was no new creation, and no interruption of organic life, between the time when the bones of bears were buried in caverns and the present period. Let me, in a few words, adduce my reasons for taking this view of the subject, and then point out what I imagine actually occurred.

The first proof I shall give is derived from the study of the arenaceous deposits in the neighborhood of Geneva. These deposits have been very properly divided into two portions by M. Necker—the upper, termed *diluvien cataclystique*, and containing erratic blocks, rolled pebbles, and sand, irregularly stratified; and the lower, or *alluvion ancienne*, composed of pebbles, more equal in size, and more regularly arranged in beds, so that we may suppose that they were deposited by a more gentle and more tranquil agent than that by which the upper member was formed.

This ancient alluvium covers all the bottom of the valley without ever reaching the summit of the acclivities of the Molasse: it could not have been deposited except under circumstances very different from those existing at the present day, and it has altogether the characters of the deposits of the diluvial epoch.

Now, in these ancient alluvial deposits, bones are found which prove that our valley was inhabited at that epoch by species of mammalia perfectly identical with those which now live there. We can detect in these bones no difference of size or of form which can authorize the establishment of any new species. On the other hand, in the bed of the Allondon, that is to say, probably in a formation of the same epoch, a tusk of an elephant has been found.

These ancient alluvial deposits are probably contemporaneous (or nearly so) with those which exist in various other parts of the Swiss plain, and in which there have been found species now living, as well as remains of elephants.

These facts seem to me to show that the mammoth lived along with species identical with those of the present day, and to prove that there was no new creation between the deposits of which I have been speaking and those of our own period.

I find a second proof in the caverns and breccias themselves. Some species are there met with which I believe to be extinct, such as the bears of the caverns, the hyænas, and some others; but there are also found bones of a larger number of species, which cannot be distinguished from those now living in Europe. The bats, the shrews, the moles, the badgers, the hares, &c., of the caverns, appear to be identical with our own. Is it probable that they should all have differed from the species now living in their external characters, and that, having been destroyed *en masse* by diluvial inundations, they should have been replaced, by means of an entirely new creation, by species which we are not able to distinguish from them?

I am of opinion that the following is the order of events as they occurred in Europe:—The species now living, and some others, were created at the commencement of the diluvial epoch. Partial inundations and changes of temperature caused some of them to perish, such as the mammoth, the species of bear having an arched forehead, the hyænas, the stag with gigantic horns, the rhinoceros, the hippopotamus, &c.; but the greater number of the species escaped these causes of destruction, and still live. Besides those which I have mentioned, and others which I have noticed in the body of my work, it is possible, for example, that the *Ursus priscus* may be the original of recent bears, &c.

It may be objected, perhaps, that there is nothing, in this manner of viewing the subject, to account for the late appearance of man. It must be remarked, however, that it is necessary to distinguish between the creation of man and his establishment in Europe. It is probable that he did not arrive there till after the inundations which destroyed the cavern-bears and the contemporaneous animals. It may even be supposed that the last diluvial deposit, and, in particular, the arenaceous formations of Switzerland, were formed before the human species inhabited our regions. There is nothing, however, to prove that man had not been created in Asia at the commencement of the diluvial epoch. It must be remembered that the Sacred Writings, and the traditions of various nations, authorize us to believe that man witnessed some of those great inundations which were entitled to the name of deluges. Subsequently, tribes of the human race became more numerous, and migrated to Europe; and every one knows that philological, historical, and physiological researches all combine to demonstrate that Asia was the cradle of the nations which have successively invaded our continent.

Lastly, it may, perhaps, be said that this idea is opposed to the theory of the peculiarity of species in each formation, and to that of successive creations. I do not think so, for the question remains untouched as respects all the anterior epochs. But even though the result of this manner of viewing the subject should be to place in doubt the theories which I believe to be at the present moment the least inadmissible, I cannot, on that account, refuse to adopt an explanation of facts which seems to me evident. The state of theoretical palæontology is still too uncertain to allow of our attaching ourselves too strongly to this or that hypothesis. It is the study of facts which is essential, and we must engage in that study unbiassed by preconceived ideas or particular systems.*

* From *Traité Élémentaire de Paléontologie*, vol. i., p. 359. 1844.

KENAWHA GAS.

COMMUNICATED by Mr. James A. Lewis, of Kenawha, C. H., Va., being an abstract, somewhat abridged, from the Charleston Republican.

The existence of large quantities of gas at various points throughout the whole extent of the salt region on the Kenawha river, was known to the first white men that explored this beautiful valley. It appeared escaping through apertures in low grounds and springs of water. As a company of the earliest explorers encamped on the banks of the river, one of their number, in a dark night, took a torch to light his way to the spring near by the encampment, and in waving it over the spring, to his great consternation it took fire, the gas burning upon the surface of the water. It was thence called the "Burning Spring," and is the same that is mentioned by Mr. Jefferson in his Notes on Virginia. It is still there, but, as we saw it last week, a mere mud-puddle. The water agitated by the gas resembles a boiling pot. It readily ignites, and for a short time it burns with a blue blaze on the surface of the water; even when the water is dried up, the gas will burn brilliantly between one rain and another.

When, in process of time, the salt-manufacturers, either from a failure of the salt-water above the stratum of rock, some 15 or 20 feet lower than the bed of the river, for the purpose of procuring the water in greater abundance, sunk their wells by boring far below the surface of the rock, the gas, in various quantities, made its appearance in the wells, in some instances jetting the water into the air, when being ignited, it spread the flame about, to the no small amazement and terror of the workmen. When this happened, they used to say "*the well is blowed*." The stream of gas, however, soon subsided, or acted only with sufficient power to force the water up into the gum or shaft, which is part of the trunk of a sycamore tree, about four feet in diameter, hollowed out so that the shell is not more than 4 inches thick. From the gum it was pumped into the cistern or reservoir.

Our salt wells are commenced near the edge of the river at low water. The gum is sunk down to the rock, a distance of from 15 to 20 feet, the lower end resting tightly on the rock. The other end is usually a few feet above the ground. This excludes the fresh water above the rock, and serves as a reservoir to receive the salt water, when it is reached by boring through the rock and the various strata of earth.

Three years ago, William Tompkins, Esq., first obtained a steady and permanent stream of gas, of sufficient power, not only to force the water up from the depth of a thousand feet into the gum, but to carry it into the reservoir elevated many feet above the bank of the river. This saved the expense of a pump, which is worked by a steam-engine. In a short time, it occurred to him, that this gas could be turned to a still more useful purpose. He therefore erected, over the reservoir or cistern, a gasometer, which is simply a hogshead, placed upright, in the lower end of which is inserted the pipe that conveys the water and the gas from the wells, the water running out through a hole in the lower end, and in the top is inserted a pipe that conveys the gas to the mouth of the furnace. When ignited, it produces a dense and intensely heated flame along the whole furnace under the row of kettles, 100 feet long, by

6 deep, and 4 wide. This saves the expense of digging and hauling coal.

Subsequently, Messrs. Warth and English, whose works are on the opposite side of the river, obtained a similar stream of gas, which has been used successfully in the same way; and more recently Mr. Dryden Donnally, Mr. Charles Reynolds, and some few others, produced a partial supply of gas to heat their furnaces in the same way.

But the most remarkable phenomenon in the way of natural gas here, and we have, no doubt, in the whole world, is that at the works of Messrs. Dickinson and Shrewsbury, which has been exhibited for nearly two months past. In this well the gas was reached at the depth of one thousand feet. What the upward pressure of the gas to the square inch is, through the aperture, which is three inches in diameter, we are unable to tell; and, perhaps, it would be impossible to ascertain. It has never had a free and unobstructed vent. There is now, at the bottom of the well, an iron sinker, a long piece of round iron nearly filling the aperture; on this are 600 pounds of iron, and about 300 feet of auger-pole used in boring, in pieces of 10 and 20 feet in length, with heavy iron ferules on the end, screwed into each other. Notwithstanding all this obstruction, a stream of water and gas issues up through a copper tube, 3 inches in diameter, inserted into the well to the depth of 500 feet, with the noise and force of steam generated by the boilers of the largest class of steam-boats. It is computed that a sufficient quantity of gas comes from this well to fill, in five minutes a reservoir large enough to light the city of New York during twelve hours. When we reflect that this stream of gas has flowed, unabated for nearly two months, what must be thought of the quantity and the facility of manufacturing it down below! In the springs hard by, and in the other wells, (with perhaps the exception of that of one or two others,) there appears, as yet, to be no diminution in the quantity at any place where it has heretofore been known to exist.—*American Journal of Science and Art*, vol. xlix., No. i., p. 209.

From the Edinburgh Philosophical Journal.

ON THE KNOWN THICKNESS OF THE CRUST OF THE EARTH.

It is proper to distinguish between the *absolute* depth to which man has penetrated in his mining operations, or the depth from the surface of the earth at the place where the operations are carried on, and the *relative* depth, i. e., the depth below the level of the sea. The greatest relative depth that has been reached is, perhaps, the bore at Mew Salzwerk, Minden, in Prussia. In June, 1844, it was exactly 1844 $\frac{1}{2}$ Parisian feet; the absolute depth was, however, 2094 $\frac{1}{2}$ Par. feet. The temperature of the water in the deepest bore was 39.7° C. (100.8° F.) which assuming 9.6° C. as the mean temperature of the air, gives a rise of 1.6° for 29.6 metres (upwards of 97.6 feet English.) The Artesian well of Grenelle, at Paris, is only 1683 feet in absolute depth. From the accounts of the missionary Imbert from China, the depth of our Artesian wells is far surpassed by that of the fire-spring, Ho-ting, which yields inflammable gas, employed in salt boiling. In the Chinese province Szü-tschuan, these fire-springs are said very commonly to reach a depth of from

1800 to 2000 feet; and at Tseu-lieu-ting (place of perpetual flux) a Ho-ting bored with the rod in the year 1812, is reported to extend to the depth of 3000 feet (Humboldt, *Asie Centrale*, t. ii., p. 521 and 525; *Annales de l'Association de la Propagation de la Foi*, 1829, No. 16, p. 369.) The relative depth attained at Monte Massi, in Tuscany, south from Volterra, according to Matteucci, is about 1175 feet. The bore at New Salzwirk approaches very nearly in relative depth the coal pit at Apendale, Newcastle-under-Lyme (Staffordshire.) There the works are carried on 725 yards, or 2045 French feet, under the surface. (Th. Smith, *The Miner's Guide*, 1836, p. 160.) Unfortunately, the height of the ground above the level of the sea is not accurately ascertained. The relative depth of the Monkwearmouth pit, near Newcastle-on-Tyne, is only 1404 feet (Philips, *Philos. Mag.*, vol. v., 1834, p. 446;) that of the Esperance pit, at Liege, 1271; and that of the lately-worked pit Marihaye, at Val St. Lambert, is 1127 feet. The greatest absolute depths to which man has penetrated are in mines that are either among lofty mountains or in mountain-valleys, so much raised above the sea level, that this has either not been reached at all, or has only been surpassed by a very small quantity.

The Eselschacht at Kuttenberg, Bohemia, before it was abandoned, had reached the enormous depth of 3545 feet (Schmidt, *Berggesetze*, Bd. 1. S. 32.) At St. Daniel, and at Geist, on the Röhreubühl, the works, in the 16th century, were 2916 feet deep. A drawing of these workings of the year 1539 is still preserved. (Joseph Von Sperges, *Tyroler Bergwerks-Geschichte*, S. 121. See also Humboldt, *Gutachten über Herantreibung des Meissner Stollens in die Freiburger Erzrevier*, published in Herder über den jetzt begonnene Erbollen, 1838, S. 124.) It may be imagined that information of the extraordinary depth of the workings at Röhreubühl had reached England at an early period, for in Gilbert's work, *De Magnete*, I find the statement that man had penetrated from 2400 to 3000 feet into the bowels of the earth.

The absolute depth of the mines in the Saxon Erzgebirge are 1824 and 1714 feet; the relative depths of these respectively are only 626 and 260. The absolute depth of the rich workings in Joachimsthal, Bohemia, is 1919 feet; but taking the height of the surface upon Dechen's estimate at 2250 feet above the level of the sea, it is obvious that there the sea level has not even been attained. In the Harz, the workings in the Samson pit, at Andreasberg, are carried on at the absolute depth of 2062 feet. In Old Spanish America, I know of no deeper mines than those of Valenciana, near Guanajuato, Mexico; I found the Planes de San Bernard 1582 feet deep; but this mine does not reach the level of the sea by 5592 feet. If we compare the depth of the old Kuttenberg works (a depth which exceeds the height of the Brocken, and only falls short of that of Etna by 200 feet) with the heights of the loftiest buildings that have been reared by man (the Pyramid of Cheops and the Minster at Strasburg,) we find that the mines are to these in proportion of 3 to 1.

Basin-shaped curved strata, which dip down on one hand and rise at a measureable distance, although not penetrated by mines or shafts, still suffice to give us accurate information of the constitution of the crust of the earth at great depths from the surface. I have to thank the excellent

geologist M. Von Dechen for the following:—He writes to me, "The depth of the coal measures at Mont St. Gilles, Liege, which our friend M. Von Oeynhausen has estimated at 3650 feet below the surface, must lie at the depth of 3250 feet below the sea level, inasmuch as Mont St. Gilles is certainly not 400 feet high; and the coal basin at Mons lies fully 1750 feet deeper. These depressions, however, are trifling when compared with that of the coal strata of the Saar-Revier (Saarbrücken). After repeated trials, have found that the lowest coal strata known in the country of Duttweiler near Bettingen, north-eastward from Saarlouis, dip 19,406, and 20,656 feet under the level of the sea." This conclusion exceeds by 8000 feet the estimate which I have given in the text of *Cosmos* for the basin of Devonian strata. These Belgian coal measures, therefore, lie as far below the level of the sea as Chimborazo rises above it, at a depth where the temperature of the earth must be 224° C. (435° F.) From the highest summit of the Himalaya to the bottom of this basin, containing vegetable remains of the primeval world, we have a perpendicular depth of 45,000 feet, i. e., $\frac{1}{15}$ of the semi-diameter of the earth.

I have thought it important thus to bring together these data in relation to the absolute and relative depths that have been reached by man, a subject in connection with which many errors have been constantly committed, principally, as it seems, through faulty reductions of the measurements from one standard to another. On proceeding eastward from Jerusalem toward the Dead Sea, a prospect is gained which, according to our present hypsometrical knowledge, is unparalleled on the face of the earth. There, on approaching the chasm in which the Jordan flows, we advance, in open day, along beds of rock, which, according to Bertou's and Russegger's barometrical levellings, lie 1300 feet in perpendicular depth below the level of the Mediterranean Sea. (*Vide* Humboldt, *Asie Centrale*, t. ii., p. 323.)—*Cosmos*, No. iv., p. 418. By Alex. Von Humboldt.

Transactions of the American Ethnological Society.
Vol. 1. New York, Bartlett & Wellford;
London, Wiley & Putnam.

A SOCIETY, with the above name, has been recently established at New York, for the purpose of inquiring "into the origin, progress, and characteristics of the various races of men,"—not on the American continent only, but throughout the world. The design is a noble one; and it has given birth to the respectable volume before us. The papers are only five in number, though the volume contains nearly 500 pages. This we like: brief disquisitions, where there is no room for the requisite illustrations, are good for little. The first and most important is from the pen of Albert Gallatin—"Notes on the Semi-Civilized Nations of Mexico, Yucatan, and Central America." It extends to full 350 pages, and is enriched by useful plates and tables. It must be of considerable value to the future historian. "An Account of Ancient Remains in Tennessee," and "Observations respecting the Grave Creek Mound in Western Virginia," go far to confirm the opinion which every late discovery has tended to strengthen, that the continent of North America must once have been inhabited by a race far higher in civilization than the present red man. But until the Amer-

ican languages have been explained by grammars and vocabularies, we must remain in the dark as to the affinity of the various tribes with one another, and still more with the people of the old world. If something has recently been done, so much remains, that ages must elapse before these problems can be solved. It is worthy of remark, that some of the characters in the Grave Creek Mound inscription resemble the Runic, some the Phœnician, and others the old British. The fourth article, "On the Discoveries of Himyaritic Inscriptions in Southern Arabia," contains indeed nothing novel; but it is useful as presenting the reader, in a condensed form, the substance of what has been hitherto discovered on the subject. The fifth article—"Account of the Punico-Libyan Monument at Dugga," is of considerable interest, though tantalizing enough from our ignorance of the ancient language of the Carthaginians. But the chief merit and interest of this volume must be based on its native character. It is well observed in the preface:—

"To its native and resident members, the American Ethnological Society feels it has but to indicate the field presented for their exertions, and the immense extent and variety of subjects that call for their investigation. The mystery that still envelopes the history and origin of the American races of man—the phenomena connected therewith—the diversity of languages—the remains of ancient art and traces of ancient civilization among the aborigines of Peru, Mexico, and Central America—the spontaneous growth or imported origin of arts, science, and mythology—the earthworks of the Ohio and Mississippi valleys and their founders:—these are amongst the topics for inquiry which the most cursory view suggests; and there are few individuals in our western country who may not obtain interesting materials for their elucidation."

We hope the society will confine itself to this, its legitimate and peculiar object. Most heartily do we wish it success; and, indeed, this volume is good earnest of it; but as it is not popular in its character, we are compelled to dismiss it more briefly than its importance deserves.—*Athenæum*.

A VIOLENT HAIL STORM.

SEPTEMBER 16th.—To the seventh posta at the foot of the Sierra Tapalguen. The country was quite level, with a coarse herbage and a soft peaty soil. The hovel here was remarkably neat, the posts and rafters being made of about a dozen dry thistle stalks bound together with thongs of hide; and by the support of these Ionic-like columns, the roof and sides were thatched with reeds. We were here told a fact, which I could not have credited, if I had not had partly ocular proof of it; namely, that, during the previous night, hail as large as small apples, and extremely hard, had fallen with such violence as to kill the greater number of the wild animals. One of the men had already found thirteen deer (*Cervus campestris*) lying dead, and I saw their *fresh* hides. Another of the party, a few minutes after my arrival, brought in seven more. Now, I well know that one man without dogs could hardly have killed seven deer in a week. The men believed they had seen about fifteen dead ostriches (part of one of which we had for dinner;) and they said that several were running about evidently blind in one

eye. Numbers of smaller birds, as ducks, hawks, and partridges, were killed. I saw one of the latter with a black mark on its back, as if it had been struck with a paving-stone. A fence of thistle-stalks round the hovel was nearly broken down; and my informer putting his head out to see what was the matter, received a severe cut, and now wore a bandage. The storm was said to have been of limited extent: we certainly saw from our last night's bivouac a dense cloud and lightning in this direction. It is marvellous how such strong animals as deer could thus have been killed; but I have no doubt, from the evidence I have given, that the story is not in the least exaggerated. I am glad, however, to have its credibility supported by the Jesuit, Drobrizhoffer,* who, speaking of a country much to the northward, says, "Hail fell of an enormous size, and killed vast numbers of cattle: the Indians hence called the place *Lale-graicacalca*, meaning 'the little white things.'" Dr. Malcolmson, also, informs me that he witnessed, in 1831, in India, a hail-storm, which killed numbers of large birds, and much injured the cattle. These hail-stones were flat, and one was ten inches in circumference, and another weighed two ounces. They ploughed up a gravel walk like musket-balls, and passed through glass windows, making round holes, but not cracking them.—*Darwin's Journal of a Voyage Round the World*, part i., p. 115.

THE EFFECTS OF GREAT DROUGHTS.

WHILE travelling through the country, I received several vivid descriptions of the effects of a late great drought; and the account of this may throw some light on the cases where vast numbers of animals of all kinds have been embedded together. The period included between the years 1827 and 1830 is called the "gran seco," or the great drought. During this time so little rain fell, that the vegetation, even to the thistles, failed; the brooks were dried up, and the whole country assumed the appearance of a dusty high-road. This was especially the case in the northern part of the province of Buenos Ayres, and the southern part of St. Fé. Very great numbers of birds, wild animals, cattle, and horses, perished, from the want of food and water. A man told me that the deer† used to come into his courtyard to the well, which he had been obliged to dig to supply his own family with water; and that the partridges had hardly strength to fly when pursued. The lowest estimation of the loss of cattle, in the province of Buenos Ayres alone, was taken at one million head. A proprietor at San Pedro had, previously to these years, twenty thousand cattle; at the end not one remained. San Pedro is situated in the middle of the finest country, and even

* History of the Abipones, vol. 2., p. 6.

† In Capt. Owen's Voyage (vol. ii., p. 274) there is a curious account of the effects of a drought on the elephants, at Benguela (west coast of Africa.) "A number of these animals had some time since entered the town, in a body, to possess themselves of the wells, not being able to procure any water in the country. The inhabitants mustered, when a desperate conflict ensued, which terminated in the ultimate discomfiture of the invaders, but not until they had killed one man, and wounded several others. The town is said to have a population of nearly three thousand. Dr. Malcolmson informs me, that, during a great drought in India, the wild animals entered the tents of some troops at Ellore, and that a hare drank out of a vessel held by the adjutant of the regiment."

now abounds again with animals; yet, during the latter part of the "gran seco," live cattle were brought in vessels for the consumption of the inhabitants. The animals roamed from their estancias, and, wandering far southward, were mingled together in such multitudes, that a government commission was sent from Buenos Ayres to settle the disputes of the owners. Sir Woodbine Parish informed me of another and very curious source of dispute: the ground being so long dry, such quantities of dust were blown about, that in this open country the landmarks became obliterated, and people could not tell the limits of their estates.

I was informed by an eye-witness that the cattle, in herds of thousands, rushed into the Parana, and being exhausted by hunger they were unable to crawl up the muddy banks, and thus were drowned. The arm of the river which runs by San Pedro was so full of putrid carcasses, that the master of a vessel told me that the smell rendered it quite impassable. Without doubt several hundred thousand animals thus perished in the river; their bodies, when putrid, were seen floating down the stream; and many in all probability were deposited in the estuary of the Plata. All the small rivers became highly saline, and this caused the death of vast numbers in particular spots; for when an animal drinks of such water it does not recover. Azara describes* the fury of the wild horses on a similar occasion, rushing into the marshes, those which arrived first being overwhelmed and crushed by those which followed. He adds that more than once he has seen the carcasses of upwards of a thousand wild horses thus destroyed. I noticed that the smaller streams in the Pampas were paved with a breccia of bones, but this probably is the effect of a gradual increase, rather than of the destruction at any one period. Subsequently to the drought of 1827 to 1832, a very rainy season followed, which caused great floods. Hence, it is almost certain that some thousands of the skeletons were buried by the deposits of the very next year. What would be the opinion of a geologist, viewing such an enormous collection of bones, of all kinds of animals and of all ages, thus embedded in one thick earthly mass? Would he not attribute it to a flood having swept over the surface of the land, rather than to the common order of things!†—*Darwin's Journal of a Voyage Round the World*, part i., p. 132.

FORMATION OF CLOUDS.

In an article, vol. xxxviii., p. 50 of this Journal, I endeavored to show that the phenomena of the ascent of vapor, and its suspension in the region of the clouds, cannot be accounted for by the agency of heat; that the vapor in the region of the clouds is at all times condensed; and that "the formation of clouds is, in general, not owing to the sudden condensation of the vapor, but to the escape of its electricity, thus allowing the particles to be brought nearer by the attraction of aggregation; and a still farther escape of the electricity enables such attraction to overcome the electrical repulsion of the particles, and to form rain."

The opinions advanced by Sir John Herschel,

* Travels, vol. i., p. 374.

† These droughts, to a certain degree, seem to be almost periodical. I was told the dates of several others, and the intervals were about fifteen years.

(at the Cambridge meeting of the British Association,) on the effect of the heat of the moon in dissipating clouds, tell against this theory; and, although the opinion of that eminent philosopher must have great weight, I trust I may not be thought presumptuous in endeavoring to show that it cannot be the *heat* of the moon that causes the phenomenon alluded to in the following extract.

"Speaking of the climate of the moon, Sir J. Herschel considered as possible the attainment of a very high temperature, (far above that of boiling water,) by its surface, after exposure to unmitigated and continual sunshine during nearly a whole fortnight. The moon, therefore, when at the full, and for a few days after, must be, in some small degree, a source of heat to the earth; but this heat, being of the nature of culinary rather than of solar heat, (as emanating from a body below the temperature of ignition,) will never reach the earth's surface, being arrested and absorbed in the upper strata of an atmosphere where its whole effects will necessarily be expended in the conversion of visible clouds into transparent vapor. The phenomenon of the rapid dissipation of clouds (in moderate weather) soon after the appearance of the full moon, (or of a moon so nearly full as to appear round to the unassisted eye,) which he stated himself to have observed on so many occasions as to be fully convinced of the reality of a *strong tendency in that direction*, seem to him explicable only on this principle."—*Athenæum*, July 19, p. 722.

In the first place, it is very doubtful whether the moon does absorb heat sufficient to raise its temperature to such a degree; for as the rays of a tropical sun are insufficient to melt the snow on the higher mountains where the air is rarified, the fortnight's action of the sun may have little influence on the surface of the moon, where, according to the opinions of many, there is no atmosphere.

Secondly, if the moon does absorb heat, and its temperature is raised as Sir J. Herschel supposes, the heat that would arrive at the earth, or its atmosphere, would be very trifling; for if the heat of the moon be sufficient to raise the temperature to the boiling point (212°,) at 100 miles distance from its surface, even then it could not increase the temperature at the distance of the earth so much as the $\frac{1}{2500}$ part of a degree, which is so trifling, that if the nights about the time of the full moon are clearer than those of the other parts of the lunar month, I submit that it must be caused by some other agency than the *heat* of the moon; and it is difficult to conceive how the little heat we receive from the moon can disperse clouds, while the direct action of the sun is insufficient to do so.—(Communicated by G. A. Rowell, Esq., Oxford, Sept. 9., 1845, to *Edinburgh Philosophical Journal*.)

GREAT RUSSIAN RAILWAY.—The largest tract of railway ever contemplated in Europe is that from St. Petersburg to Odessa—extending over an uninterrupted line of 1,600 miles. It will connect the Baltic and the Black, and consequently the Caspian, seas—traversing three different zones of temperature. It is, however, the beginning of what may really be termed an overland route—connecting, in fine, the Russian metropolis and Ispahan. The Emperor Nicholas takes great interest in this gigantic plan.—*Advertiser*.

From the Edinburgh Philosophical Journal.

On the Registry of the Hourly Variations of the Thermometer, by means of Photographic Papers. By MUNGO PONTON, Esq., F.R.S.E., F.R.S.S.A. Communicated by the Royal Scottish Society of Arts.*

AN unexceptionable mode of registering the hourly variations of the common mercurial thermometer, has long been a desideratum in science. Hitherto we have been able to register only the maximum and minimum of temperature for each day and night, and even that in rather an imperfect manner; but to record the hourly movements of the mercury in the thermometer has not, so far as I am aware, been as yet successfully attempted. Various purely mechanical methods have been tried from time to time, but without satisfactory results. Nature, however, is full of appliances; and it only requires perseverance on our part to avail ourselves of the implements so profusely scattered around us.

The newly discovered phenomena of photography appeared to me likely to afford facilities for attaining the object in view; and the results I have arrived at lead me to hope, that we may successfully employ light to record, with its subtle pencil, the changes in the heat of the atmosphere.

The first difficulty to be overcome was to obtain a clear and well defined shadow of the filled portion of the bore of the thermometer, capable of being distinguished from the shadow produced by the empty portion. This is a matter of some nicety. After several trials, the following appeared to be the best mode of securing this result:—Select a thermometer with a flat bore, and grind the stem down on one side nearly to the bore, so as to produce a flat, or rather slightly concave, polished surface, and let the opposite side be ground only a little flat. If the latter flattened side be now exposed to the light of a lamp or gas flame, condensed by means of a cylindrical glass vessel filled with water, placed at a considerable angle, it will be found, that by a little nice adjustment a certain position will be obtained, in which the shadow of the bore may be thrown on a piece of paper placed against the other ground surface of the stem, in such a manner that the shadow of the empty part of the bore is reduced almost to nothing, while that of the filled portion is considerably expanded, and well defined. A little practice suffices to hit the best adjustment.

The next point was to obtain a photographic paper sufficiently sensitive to be affected by artificial light at a convenient distance, and in a sufficiently short time, but which could at the same time be kept long enough without injury. After various unsuccessful attempts, I have ascertained that paper prepared in the manner to be described, answers the purpose perfectly. The process is a modification of that discovered by Hunt, and to which he has given the name of *Energiatype*.

The paper is first to be coated with either the iodide or the chloride of silver;—I prefer the latter. The usual mode of washing, first with the nitrate of silver, and then with either the iodide of potassium, or the chloride of sodium, may be adopted for this purpose. It is desirable to have a good coating of either the iodide or chloride of silver on the paper. The soluble salt having been well washed out, by immersing the paper in clean

cold water, it is next to have applied to it a saturated solution of succinic acid. In this state the paper may be preserved for any length of time, if kept dry, and carefully excluded from light.

Before use, a wash of the aceto-nitrate of silver, as directed to be prepared by Talbot, is to be applied. This gives the paper the necessary degree of sensitiveness, and in this state it may be kept without injury to its properties for two or three days, but not more.

If the aceto-nitrate be applied without the previous wash of succinic acid, the paper will be equally sensitive; but it will blacken spontaneously in the dark, and is therefore useless for the purpose. The succinic acid thus appears to exert a conservative influence in preventing spontaneous decomposition.

The photographic image formed on this paper is latent, and requires to be brought out by the application of a saturated solution of the sulphate of iron, mixed with three or four times its bulk of mucilage of gum-arabic. This mixture should be freshly prepared, for it soon becomes a jelly, which is unfit for use. The application of the sulphate of iron to the paper may be made at the distance of upwards of 24 hours from the time of the first impression of the latent image, which will, notwithstanding that lapse of time, come out distinctly; and thus a whole day's record may be brought out at once. The aid of a little heat is sometimes necessary for the development of the image.

The mechanical arrangements are these:—A black japanned cylinder of tin, about 4 inches diameter, and 4½ inches deep, has a piece of the sensitive paper wrapped round it. This cylinder is intended to be moved round by a time-piece, and traverse behind the stem of the thermometer. It will be stationary for a half or a quarter of an hour as desired, at each division of the cylinder, and then be moved a division by a jerk. There will thus be time for the image to be completely formed by the action of the light. Around the cylinder carrying the sensitive paper is another blackened cylinder, 4½ inches diameter and 4 inches deep, with a slit in it just sufficient to admit the stem of the thermometer. This is intended to screen from the light all that portion of the paper which is not in action. A cover goes over the whole, the more effectually to exclude all light except that which passes through the stem of the thermometer. The stem itself is also furnished with wings of black paper, to prevent the light from spreading on either side.

The thermometer should have its stem twice the length of what is required for the natural range of temperature, so that the bulb may be placed at a considerable distance from the portion acted on by the light, in case of any increase of temperature from that cause; and the bulb and lower portion of the stem should be completely screened from the light. This is accomplished by placing the thermometer in a wooden box, the bulb and the lower half of the stem being in the box, which is open behind to admit the air, while the upper portion of the stem, intended for use, is left standing above the box. The time-piece may be placed in this box if convenient.

The cylinders already described, are placed behind the exposed portion of the stem, so that the image of the bore may be received on the sensitive paper surrounding the inner cylinder, care being taken that the paper be applied as closely as possible to the stem.

* Read before the society on 10th March and 12th May, 1845.

The whole apparatus is now to be placed near a lamp, or a good sized gas flame, the light from which is to be concentrated on the stem by means of a cylindrical glass bottle filled with water, as already described. If the registration is to be half-hourly, the distance of the light may be about 2 feet; if every quarter of an hour, the distance should be about 1 foot.

By this arrangement the image of the mercury in the bore, as it stood during each half or quarter of an hour, is impressed on the paper in a latent state, and the whole series may be brought out at once by the sulphate of iron at the end of the 24 hours.

A scale is to be adapted to the cylinder to determine the degrees, and corresponding marks should be made on the paper, so that the scale may be applied to it after removal from the cylinder. A slip of paper about an inch and a half broad, placed on that portion of the cylinder where the mercury may be expected to range, will, in general, be found sufficient.

The same method of registration, although peculiarly applicable to the thermometer, may be also employed for the registration of the barometer and other instruments. It has this peculiar advantage, that it does not interfere in the smallest degree with the natural action of the instrument, but merely takes a picture of the state of the instrument during a given time. The chief expense would be that of the artificial light, but this might be partly economized, by a contrivance for that purpose. The same artificial light might also be used for registering several instruments.

The photographic paper which I have found best adapted for the above purpose, is equally fitted for taking landscapes in the camera obscura, because it keeps well for being taken to the field, and may also be allowed to remain for so considerable a time before the image is brought out.

*Additional Communication.**

Since my former communication to the Society on this subject, Mr. Bryson has had the kindness to adapt to the photographic thermometer a clock movement, so as to complete the arrangements necessary for a half-hourly registration of the temperature. The connexion is formed by means of a spindle, terminating in a small pinion, and attached to the striking train of the clock. The pinion works into a horizontal toothed wheel, carrying the cylinder, on which is placed the sensitive paper, and which is thus, by the action of the clock, moved one division every half hour.

Farther experiment having proved, that, by a more perfect concentration of the light, a sufficient effect could be produced on the paper by an exposure of four or five minutes, it appeared advantageous to limit the exposure to this extent, by providing for the raising and lowering of the gas flame, so that it might be raised to its full pitch for about five minutes every half hour, and continue burning with a very small flame during the rest of the time.

In order to obtain a better concentration of the light, I employ a lenticular piece of glass, 4½ inches in length, 3 in width, and about ½ inch thick in the middle. This produces a long narrow light along the stem of the thermometer. I find it advantageous, in using a fish-tail burner, to turn the edge, instead of the flat side of the flame, towards the lens.

* Read before the society, 12th May, 1845.

For the purpose of raising and lowering the gas, the clock is furnished with two hands, forming a diameter of the circle. Over or under the centre on which these hands turn, is placed a perpendicular lever, terminating at bottom in a small roller. Proceeding from one end of the lever is a thread passing over a pulley at a little distance, and having a small weight suspended to it, by which the lever is pulled a little aside from the perpendicular position.

In the gas tube a knee is formed, and immediately over the place where the gas passes from the perpendicular into the horizontal tube, there is a small rectangular chamber; and the termination of the perpendicular pipe is a flat rectangular piece of brass at the bottom of the chamber, having a hole in its centre for the admission of the gas. On this flat surface rests a small rectangular piece of iron, reaching to about one sixteenth or one twentieth of an inch from the top of the chamber which is closed. Above the flat top of the chamber is suspended, on an axis, a small horse-shoe magnet, with a lever several inches long projected from its upper curvature. To the end of this lever is attached a thread, which proceeds to the upper limb of the lever above the clock. By this attachment the magnet is drawn aside from the chamber in the gas tube, and, consequently, the piece of iron in that chamber being unaffected by the magnet, rests over the orifice for the admission of the gas, which it closes to such an extent as to admit only a minute portion, sufficient to keep up a very small flame.

When the hands of the clock approach the perpendicular position, the upper hand presses against the roller at the bottom of the lever; and, as the hand moves round, it carries the lever with it, and thus raises the small weight above mentioned, at the same time slackening the thread attached to the magnet, which being thus at freedom to move, is attracted towards the iron in the chamber. So soon as the poles of the magnet reach the top of the chamber, the piece of iron jumps up towards them, and thus lets on the full flow of the gas, raising the flame to its highest pitch at once. This state of matters remains while the hand of the clock moves onwards for about five minutes, carrying the lever with it, and so continuing to raise the small weight. At the expiration of the five minutes the hand of the clock passes the lever, which instantly returns to its original position, and, in consequence of the accumulation of power attending the fall of the weight from the height to which it has been raised, the lever returns with such force as to jerk the magnet away from the chamber in the gas pipe, and thus allow the piece of iron in that chamber to drop into its original position, and thereby reduce the gas flame at once to its lowest point.

By these means the raising and lowering of the gas is accomplished with less strain upon the clock than it would be were a stop-cock employed.

In order to prevent the action of extraneous light during the day, it has been found advisable to place between the lens and the thermometer a small screen, which is opened and shut by the action of the same lever that raises and lowers the gas. The thermometer is thus exposed only while the gas flame is at its height.

For the successful production of the images of the mercurial column in the thermometer tube, everything depends on the light being made to fall upon it at the proper angle, so as to obliterate the shadow from the empty part of the bore, and increase the shadow produced by the full portion

Unless this position be hit the images will not be distinct.

As it appeared desirable to have it in our power so to arrange matters that the clock might be inside of the house, while the thermometer and registering cylinder stand outside, I have contrived a method by which this may be accomplished. It is on the same principle as that by which the gas is raised and lowered, and may be managed by the same lever, so that the shifting of the cylinder takes place at the same instant that the gas is lowered, just after the registration has been completed. The only connection between the clock and the cylinder is a thread, which may pass through the window. I have had this plan in action, but the apparatus requires some little alteration.

By this arrangement it is easy to cause the same clock register both a thermometer and a barometer, or even a barometer and two thermometers, one placed in the sun, the other in the shade; while the registration of the barometer may be either by the photographic method, or by the mode previously invented by Mr. Bryson.

The Committee appointed to examine Mr. Ponton's Photographic Thermometer, report very favorably.

TEA AND TOAST.

ONE day last week the London Dock Company, at the opening of their new range of tea-warehouses, gave a party to the Tea division of the mercantile interest of London. The "usual toasts" were given on the occasion; and though, no doubt, these toasts were, so to speak, buttered, we believe that they were not exactly that description of toast which is "usually given" at tea. On the health of Souchong being proposed,—

Souchong (through his representative) declared that he had never risen—in the market or anywhere else—under circumstances so flattering as the present. He had been often drunk; though he was never either tipsy himself, nor the cause of intoxication in others; for his was the draught that cheered but not inebriated. Around him were the merchant princes of London; though he must regret the absence of one who was at once a merchant prince and a merchant tailor. He felt that he had now been on his legs long enough, and could only return his best thanks for the honor that had been done him.

Gunpowder felt himself ready to explode with gratitude for the distinction which had just been conferred upon him. He hoped to continue to give satisfaction—in a friendly way: he was not that gunpowder that feared to be superseded by steam: he respected steam for its connection with boiling water—which was his element. It was his boast to load the caddies, and not the cannons, of his country. Allied as he trusted ever to be, with the milk of human kindness and the sugar of free labor, it should ever be his aim to promote universal peace.

Green Hyson, in acknowledging the compliment that he had just received, would notice with pride an epithet which had been applied to him. He had been called evergreen: he felt thus associated with the laurel; and if the laurel bound the poet's temples, he had often to boast of stimulating the poet's brain: he was aware that it had been insinuated that he was hostile to the nervous system; this was a calumny, and he took that public opportunity of making the assertion.

Young Hyson, after the eloquent speech just made by his brother, would merely express his thanks. He was unaccustomed to public speaking; his experience being limited to the silent spouting of the kettle.

"The Genuine Leaf" having been proposed—

A stranger rose to respond. He claimed the appellation which had just been mentioned: he was the British Leaf. (*Indignant cries of "Turn him out!"*)

A scene of indescribable confusion here ensued, amid which the pretender was expelled from the room. Order having at length been restored, harmony resumed her sway, and several sentimental and comic songs having been sung, the company separated at an advanced hour.

SERENADE.

WE have been (exclusively) favored with a copy of the following graceful verses composed by Doctor Pretorius, and sung by him to the guitar before the windows of the Royal guests at Rosenau. They show considerable aptitude in a German, there being only one word, that of *Ritter*, (knight,) which is not idiomatic English. The doctor has been appointed Knight of the George and Blue Boar of Coburg in consequence of the effusion:—

Sleep, softly sleep, O royal pair! and be your
slumbers cosy now;
Watch round their pillows, angels fair, and give
their eyes repose enow;
And summer flowers and summer air breathe soft
around Schloss Rosenau!

No jealous gates are locked and barred around the
Dame and Ritter here,
Nor sentinels keep watch and ward, save wakeful
stars which glitter here,
Or larks (which come relieving guard at morn,) and sing
and twitter here.

Though England is an Empire grand, and but a
humble Duchy's this;
And though the realm which you command a
thousand times as much as this;
You cannot take in all England a pleasant slumber
such as this.

As calm as in his infancy the royal Albert dozes
here;
Forgetting cares of royalty the Stranger Queen
reposes here,
Though citizens and peasantry come walk amid
the roses here.

In Pimlico there roses blow, if true the papers
write of you,
But 't is not thus in Pimlico your people take de-
light of you;
Were ever English people so allowed to take a
sight of you!

Then softly sleep, O royal pair, and pleasantly
repose, ye know
In England there is state and care, and weariness
and woes enow;
But summer wind and summer air breathe gently
round Schloss Rosenau.

Punch.

From Tait's Magazine.

JEMIMAH WILKINSON, THE AMERICAN PROPHETESS.

BY COLONEL JOHNSON.

THE subject of this sketch received her being in the state of Rhode Island, one of the New England states, North America, about 1756, while the country remained a British province.

The Puritans who first set foot on the Plymouth rock, in the reign of Charles the First, and their descendants, who inhabited the country an hundred years afterwards, were not to be distinguished by a single moral or religious peculiarity. While the revolutions of Europe in church and state were presenting new phases of society, and bringing out new developments of civilization, puritan New England, in its religion and morals, stood still for more than a century. Were the pilgrim fathers uncompromising zealots, ultra Calvinists, rigid disciplinarians, and intolerant bigots? So were their great-grand-children at the time Jemimah Wilkinson sprang up among them. It presents, then, a curious inquiry to the speculative philosopher, how, in such a community of staid habits and immutable religion, a false prophetess could rise up among them with any chance of success.

The parents of Jemimah were not above the common yeomanry of the country, except that her father was a ruling elder in the Calvinistic church. Her grandfather had been more distinguished. He had sat in the first council of the colony, where, on account of its being seed-time, and the members anxious to get home to their farms, they gravely resolved to adopt the laws of God for the government of the colony, until they should have time to meet together and make better.

Jemimah inherited the native talents of the whole stock; and I should conclude from her subsequent career, that her education was superior to what fell to the common lot of New England females, at that period. From the living chroniclers of the place, I have not been enabled to gather anything important of her early history, before she reached the age of twenty-four years, except that she was very grave, contemplative, absent, and somewhat eccentric.

There is a certain epoch in the history of all prophets, whether true or false, from which they date their commission; when, either by a vision, the ministration of angels, a journey to heaven, or by the voice of God himself, the inspired one receives, or pretends to have received, the divine afflatus, by which he is qualified to open his authoritative message to the world. If the lips of Isaiah were touched with hallowed fire from off the altar; if Mahomet was caught up into the country of Cherubim; so Jemimah Wilkinson, late of Rhode Island, spinstress, at the age of twenty-four met the Almighty in a trance, as she ever after boldly affirmed, and received a commission at His hands. The circumstances of this event are too important in the history of the prophetess to pass unnoticed, and must therefore here appear in their order.

It occurred, then, about 1780, when our heroine was of the age aforesaid, that after a few days' slight illness, she fell into an unusual syncope, presenting more the pallid lineaments of death than any state of disease known to physiology.

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Her eyes remained partially open, fixed on vacancy; or rather apparently gazing on some terrific object; pulsation had ceased; the silver cord seemed loosed; the wheels of life stood still; and nothing indicative of vitality remained, but a slight warmth in the region of the heart. In this condition she had remained for two days and two nights, when her medical attendants, after having exhausted their skill in efforts at resuscitation, pronounced her dead; and the agonized family, no longer held in suspense, now found a definite object for their grief, as they poured out their tears for their beloved and lost one. It is the custom of that country to bury the dead on the next day after the decease. No invitation is extended to particular friends, to be in attendance. The corpse is generally removed to the parish *meeting-house*, where a promiscuous congregation is assembled with the *minister*; singing, prayer, and a funeral sermon follow, when the whole congregation march in procession to the place of sepulture. Accordingly, the next day was fixed for the funeral of Jemimah Wilkinson. When it arrived, an immense concourse of people were on the spot, drawn out, as well on account of the popularity of the deceased, as from a laudable curiosity to learn more of the singular circumstances attending her exit. The family appeared in decent mourning; the coffin was placed on the altar in front of the pulpit; the preacher had ascended the holy place, and was in profound meditation, preparatory to that solemn service which devolved upon him. The assembly, in sympathy with the scenes before them, and feeling that they were in the house of mourning, were hushed into silence; when, of a sudden, and to the astonishment of all present, three distinct raps, coming forth from the narrow house of the dead, sounded through the aisles, and echoed from the vaulted ceiling of the church. This was succeeded by a silence still more profound; not a limb was moved nor a whisper breathed; the awe-stricken Puritans sat in solemn amazement, as if the day of judgment, and the voice of the last trumpet, had just sounded in their ears. In the midst of this silence, and while every eye was turned toward the altar, the short lid* at the head of the coffin was thrown back, and the pale hand of Jemimah Wilkinson was extended upwards, as if in the effort of rising. In a moment the pious divine and family physician were at her side. The lower lid was stricken off; aid was given to her efforts, and she sat up in her grave-clothes in the midst of an amazed congregation. After a short pause, the prophetess opened her lips in faint words, which were rendered audible only by the breathless silence which otherwise prevailed. She declared that her former self had died, and passed into the land of spirits—that this which they now saw was her resurrection and spiritual body, redeemed from corruption by the power of God, that she might come back to earth, as a new proof of the resurrection of the dead—that, while absent from the body, she had received a commission from the Holy One investing her with the power of Jesus Christ until his second coming to judge the world—that she had authority to raise up a holy and elect church on the earth, who should share with her in the first resurrection, and be present to witness her equal glory with Christ when he should descend in the clouds of

* Coffin lids in that country are made in two parts; the upper division, about a foot in length, is hung with brass hinges, left unfastened till they arrive at the cemetery.

heaven. It may well be supposed, that this astounding announcement, made under circumstances thus extraordinary, was not without its effects upon a multitude so disposed to the marvellous from their sympathy in the scene. Its ultimate influence upon the surrounding neighborhood will by-and-by more fully appear. Various opinions have been entertained by the philosophic and incredulous in the neighborhood, as to the true character of this extraordinary vision. Some very good men have supposed that the Almighty, whose power over the invisible world is as absolute as over the material universe, did indeed in this instance employ a spiritual agency to effect some good purpose; but that, through the weakness of the erring creature, what was intended for salvation was perverted, and made the occasion of the wildest fanaticism. To support this notion, her former piety, and the otherwise inexplicable features of the case, are referred to.

Others have supposed that the melancholic subject of the vision was predisposed to swooning or fainting fits, in which, while the other powers of mind and body were suspended, the imagination, as in case of a dream, was left free to wander over heaven, earth, and hell; and that her previous sublimated piety gave direction to her fancy, and led her thoughts up to the temple and throne of God, where she verily *supposed* she heard the announcements, and received the commission, which she afterwards made known. This notion finds corroboration in the apparent sincerity of her after life. If correct, it presents a notable case of self-deception.

Others, again, have resolved the whole matter into a systematic scheme for personal aggrandizement, power, and wealth; by which its authoress became the founder of a sect, the leader of a party, and the oracle of her devoted followers. This explanation, though less charitable than the others, and scarcely reconcilable with her former piety, and the wonderful phenomenon of the trance, is, nevertheless, more in accordance with her future developments.

It is said, that "a prophet is not without honor, save in his own country;" but it must be conceded to Jemimah Wilkinson, that, even there, and among her own kinsmen, her mission was honored by scores of proselytes. Her father's family, and immediate kinsfolk, who best knew her moral character, and who were eye-witnesses of her trance, were the first to seal their testimony to the truth of her doctrines, by unreserved discipleship.

Soon she established regular meetings, where the people flocked in multitudes; some to gratify an awakened curiosity, others to wait on her ministrations with a profound conviction of their truth. Some who were present on such occasions, and who were by no means favorable to her pretensions, have assured me, that so much evangelical truth was mixed up with her statements; so original were her conceptions; so vivid her imagination; so sublimated her piety, and pathetic her appeals, that it was not strange that the unlettered mind should be warped from the common faith, and hundreds should rally around her standard, to go up with her to possess the goodly land. The company of the *faithful* in her native state, already numbered some hundreds. That it was not quadrupled, was owing, undoubtedly, to the impolitic adoption of an unnatural rule for the government of her flock; namely, that they should "neither

marry nor be given in marriage; and those who had wives, should become as those who had none."

Religionists of all ages have been tinctured with this folly. It was the foundation of the monastic orders. Its requirements, by the popes, of the clergy of Britain, furnished matter of contention for many centuries. The stalwart Saxon, in whom the voice of nature was too potent for such *single* spirituality, resisting unto bonds and imprisonment, raised up a standard against papal domination, which was only confirmed and established in the reformation of Luther. Founders of sects, therefore, who incorporate this element into their systems, however they may prosper for a season, will find in the end, that nature will resent such a prohibition in her empire—her voice will be heard—her laws will prevail, to the subversion and overthrow of every celibate hierarchy.

Another element adopted in Jemimah's system, was conceived in more wisdom. Though at war with the conventional usages of society, it outraged no laws of nature; and addressing itself to the indigent and hungry, it operated as a foil to the other objectionable feature, by drawing in the poor, the maimed, the halt, the deaf, and blind, to the place of bread, and equal enjoyments. This item was no other than that adopted by the first disciples of Jesus, after the Holy Ghost had fallen on them at Pentecost, when, "neither of them said that ought of the things which he possessed was his own; but they had all things common." Another principle adopted and acted on in this new system was, to collect and adopt, as constituent parts of their community, all the orphans, foundlings, and poor children, within reach of their operations; thereby, in a manner, supplying the defects of the other part of the system, that the society of the faithful should not ultimately become extinct. These two last mentioned elements, though wisely contrived, to increase the numbers of the sect, could not fail, in their practical working, to increase poverty in the same proportion. This was soon felt, to the heart of the community. Jemimah could shower down the spiritual bread, such as it was, in profuse abundance, which she never failed to do at their solemn convocations; but still, these ethereal minded disciples were constantly reminded that they were still in the body, by the cravings of unsatiated appetites, and the shivering of their uncovered limbs. This was a matter to be looked into. Rhode Island, as a country, was a poverty-stricken region; the land cold and hungry—the climate bleak and unpropitious.

Matters for the society were getting worse and worse. What was to be done? In this emergency the prophetess applied to the divinity *that was within her*, and the answer returned was, "Thou shalt go out into a strange country, and to a people of strange language; but fear not; for lo! the angel of his presence [alias, Jemimah Wilkinson] shall go with thee. He shall lead thee; and the Shechinah [that is, Jemimah] shall be thy rearward!"

About this period, the celebrated Oliver Phelps, whose history I may hereafter lay before the public, had effected his treaty with the Seneca Indians, by which an extensive territory of Western New York was ceded to him and his heirs forever. This purchase was seventy miles in breadth, and an hundred in length; bounded on the north by

Lake Ontario; east by Cayuga lake; south by Pennsylvania; and the spurs of the Alleghany mountains; and west by the Genesee river. At this period, it is the most populous and highly cultivated portion of the Union; and, having respect to luxuriousness of soil, abounding wealth, hydraulic erections, clustering cities, towns, and villages, convenience to market, and other elements of perpetual prosperity, I think all travellers who have visited the spot will agree with me in saying, it is the garden of the New World.

At the time of which we write, when the prophetess received her direction to go to a strange country, this was, indeed, a strange and unknown land to the settled portion of America, lying far beyond the western limits of civilization. The sound of the axe had never been heard in its ancient forests, nor had foot of the most adventurous pioneer pressed its soil. It was, indeed, the habitation of a people of strange language; for no voice, since "the morning stars sang together" at creation's birth, had ever broken the solitude of the wilderness, or awoken echo from its deep glens and mountain-caves, save the whoop of the savage warrior, or the howlings of beasts of prey. To this country, then, when in the condition I have just described it, Jemimah Wilkinson emigrated with her followers—performing a journey of five hundred miles, mostly through the forests, destitute of highways—to plant her colony in a more congenial soil, and develop her doctrines on a wider theatre. Though the savage tribes had conveyed by treaty the greater part of the territory, yet, as the process of settling, by the whites, would occupy many years, those stalwart foresters, the ancient proprietors of the land, still lingered around the graves of their forefathers, as if in no haste to break communion with their hallowed manes, which they believed to people the air, and "walk the earth unseen, both when they waked and when they slept," warning them of approaching danger, and becoming their guardian *genii* through the vicissitudes of life. These scattered tribes, though principally inhabiting their reservations on the aforesaid territory, were not scrupulous in the matter of the chase, but promiscuously wandered over the whole country for their game; and, what was quite natural in the case, they looked with jealousy and distrust at any encroachment on their ancient dominions; having occasion to be dissatisfied with a treaty procured by finesse, if not by fraud, by which their former hunting-ground was about to pass from them forever; their sacred spots, consecrated to the dead, to be desecrated; and the bones of their venerated chieftains to be turned up by the white man's plough-share, to bleach in the sun-beams, or mingle with the common earth. It was, then, with no ordinary feelings of surprise that a hunting party of these savages witnessed the arrival of the *holy band*, consisting of some hundreds, with the prophetess at their head. Runners were despatched from this small party of Indians to notify to the head men of the nation this important event. Jemimah had effected her purchase of land of its proprietor, consisting of a township, of six miles square, in the very heart of this beautiful country. She named her purchase after the holy city of Judea; calling it *Jerusalem*, because out of it was to go forth the word of life, to enlighten the surrounding nations, as well pagan as civilized.

It still retains the name bestowed upon it by the prophetess; and will be found by the traveller,

about twelve miles south-west of the beautiful town of Geneva, on the west side of the Seneca lake, in the well known county of Ontario. That the reader may know with what rapidity the value of real estate is advanced in a new country, by its progressive improvements, I will here state, that the worth of Jemimah's purchase at this time, is not less than £400,000 sterling. Its original cost, to the prophetess, as is still to be seen in the record of her deed, at Canandaigua, the capital of Ontario, was but £500. Well, the next difficulty to be encountered, was with those turbulent neighbors, the Seneca Indians; for a settlement within their borders could not go on, at that period, unless they could be propitiated.

The neglect of such a precaution has been the occasion of many a bloody massacre. Penn, perhaps, with the exception of Jemimah Wilkinson, was the only pioneer of emigration in the new world, who adopted the true policy with these unlettered children of nature. His scheme, bottomed on eternal justice, and the pacific theory of the gospel, being practically carried out before the pagan eye, won for Christianity (exhibited in that amiable form) the profoundest reverence, even from savage breasts; while, at the same time, it procured the safety and prosperity of his band of emigrants, who first peopled Philadelphia and the country around. His doings are too well known to need repetition here. They stand recorded on the enduring page of national history; and live in the veneration of his followers.

While Jemimah and her disciples were busily employed in laying out their grounds, it being on a spot formerly occupied as an Indian village, a formidable band of the natives, who had been collected by the runners, looked in upon her, quite unexpectedly, and to the dismay of her lamb-like believers. The prophetess alone remained unmoved at this hostile array—for the warriors had come well armed; rifles and long carbines trailed from their right hands; tomahawks, hatchets, and scalping-knives gleamed in the sun's rays, as they depended from their belts; the war-paint upon their faces, and eagle quills nodding on their scalp-tufts, invested them with unearthly ferocity; so that a much more valorous band than the followers of Jemimah, might well have had misgivings, without the charge of cowardice justly resting on them. The prophetess approached the intruders with a firm step, and undaunted eye, apparelled in that unique dress which I shall hereafter describe. She was met, to her surprise, by a lad of white-skin, who addressed her in good English. This lad was no other than Jasper Parrish, afterwards Captain Parrish, who became the United States interpreter, in their negotiations with the Indians, for forty years thereafter. Born in Pennsylvania, he was taken prisoner some years previous, in the revolutionary war, when his family were all massacred in his presence, and himself caused to run the gantlet. He came off triumphant—was adopted into an Indian family—became a favorite—finally settled in Canandaigua, enriched by Indian munificence—filled a broad space in the good opinion of his country—died in the bosom of civilization, and within the pale of the Christian church. This Jasper Parrish, while a vagrant orphan, incorporated with the wandering tribes, as one of their number, met the prophetess of Rhode Island, in advance of his savage companions, who were drawn up in battle array. He inquired of her, who she was, whence she came,

forests, had arrived in the heart of the Senecas, pervaded the assembly for ten minutes, when the Indian prophet arose, described arcos and delivered

who were her companions, and what was their present object. Her answer, as Parrish afterwards reported it, was as follows:—"I am the Out-beaming of God on earth, in the place of Jesus Christ, until his second coming—I came from the east—these are the lambs of my flock—and we seek a pasture in the wilderness." The interpreter, though a youth, was a shrewd lad; he comprehended in a breath, as well from the vehemence and apparent sincerity of the speaker, as from her singular dress, that she was some fanatic; and he conceived the thought, that this could be turned to good account with the savages, whose superstitions in these matters, I will shortly hereafter describe. But the young interpreter was in a sad perplexity to determine to which *sex* the "Out-beaming" belonged; especially as her dress was so equivocal, that it went to establish, rather than resolve the doubt. And, as I have referred to this habiliment once before, and promised an explanation, I will proceed to describe it, as I saw it myself, many years afterwards; especially, as I was assured, by those who knew, that her dress was never varied in appearance, through her long prophetic life. First, then, she wore neither gown nor petticoat. Her lower limbs were covered with kilts or *pantaletts*, coming down midway between the knee and ankle—they were composed of very fine woollen cloth, of light drab color. Her hose were of linen thread, of flax color;—shoes covered with large yellow buckles. Her tunic was like a bishop's under-dress; showing a skirt opening in front, coming down midway between the waist and knee. The outward garment, covering the bust and arms, was not unlike a riding habit with rolling collar and wide lapels, turning back upon the breasts. Around her neck was a wide white ribbon, crossed in front, and pinned down upon her breast, not unlike a clergyman's small linen worn in front. The material of her habit and tunic were all of a piece with her kilts, being a very light-colored drab. Her black hair parted in front, and coming down upon her shoulders on each side, rolled up in natural curls. She wore a drab quaker-hat, with a rim not less than eight inches wide.—While my hand is in at description, let me say, as to her person, that nature had not been stingy, either in bulk of material, or symmetrical adjustment. She was considerably above the middle stature, as to height and muscular development. Her eyes were coal-black, large, steady, firm; the *tout ensemble*, or entire person of Jemimah Wilkinson, taken with her carriage, manners, and address, would impress the beholder with strong intellect, decision of character, deep sincerity, and passionate devotion.

Now my reader will understand, from the above, why young Parrish doubted as to which *sex* she belonged; and her voice furnished no better clue; in aid of nature, she had made it sonorous by her *out-pourings* to her flock, some of whom were deaf, as before stated. My reader may think me trifling upon this question of *sex*; for he will ask me, what mattered it to the interpreter, whether the prophetess was man or woman? Be patient, kind reader—don't anticipate. Let me assure you, matter enough depended on this equivocal point. The success of the whole enterprise; ay, the safety of the lambs of the flock; yea more, *the life of the prophetess herself rested on this single point*. If the reader will indulge me in another digression, I will here satisfy him, on the spot, of the truth of the above statement. Indians,

like Orientalists, place women low in the scale of moral being, denying to them souls and immortality; hence they refuse them a place in the council-house; intrust them with no secrets of war; admit them to no part of religious rites;—and if a woman is even suspected of divination, or having to do with invisible agencies, she is immediately put to death as a *witch*, and her children must seek shelter in a foreign tribe. While, on the other hand, a *Medicine-man*, as they call an astrologer, or magician, ranks high in the nation; wielding authority even over their chiefs; sitting among their kings; and ruling by his counsel, as the great prophet of the tribe, in all affairs of war and state. Now, had the interpreter announced Jemimah Wilkinson, to the warriors, as a *woman* having the power of Deity, or as dealing in occult arts, her heart's blood would have been spilled before the chieftains left the spot, and the lambs of her flock been devoured by the *savage wolves* of the Senecas. The matter of *sex*, therefore, as the reader now sees, became most important on that occasion. Parrish, who had witnessed barbarous massacres enough, was deeply anxious to prevent the blood of these unarmed enthusiasts being shed; and, knowing the Indian customs aforesaid, put the direct inquiry to Jemimah, whether she were man or woman? "As to that, young man," replied the prophetess, "I am neither; being the effulgence of Divinity, and at the head of a kingdom whose subjects neither marry nor are given in marriage; and where they are neither Greek nor Jew, bond nor free, male nor female, it does not behove me to allow the distinctions of the flesh, where all are one in Christ, whose authority I now wield." This was a poser to the young interpreter. He knew not how to proceed. Jemimah, perceiving his embarrassment, added, "True, I was once known as Jemimah Wilkinson; was *then a woman*, and so remained, till my mortality put on immortality, and was swallowed up of spiritual life." "God be thanked for that," said Parrish, "keep the old *name* to yourself; and, if you were not actually changed from woman to man, in the operation, let me say to the Indians that you *are* a man, or you'll meet with a worse change than ever came over you *down east*." A few words served to explain the Indian custom to the quick apprehension of the prophetess, who undoubtedly rejoiced in spirit that on *that* occasion, at least, she was delivered from the bonds of the flesh. Parrish, as master of ceremonies, and chief mediator in this grave affair, left Jemimah where they had been standing, and hastened to his companions, to report progress. If I were not opposed to the pedantic usage of interlarding English books with scraps of French and Italian, and, moreover, if I supposed my readers understood the language of the Senecas, I should bring out the life-tints of these Indian scenes in *their* guttural and beautifully figurative dialect; but, having undertaken to write an *English* account of this woman, I should not redeem my pledge by talking in an unknown tongue. Would that my contemporary writers might think of this matter, and govern themselves accordingly! Well, Parrish declared to the assembled warriors, that the great medicine-man of the pale-faces, whose mysterious power in divination was the admiration of his own nation, being moved with compassion for the wandering tribes, had left the place of the sun's rising, accompanied by his friends, and, after passing their boundless

forests, had arrived in the heart of the Senecas, to teach them more fully of the Great Spirit, to heal their diseases, defend them from *evil ones*, and, controlling the elements of nature, to bring fruitful seasons, good fishing and hunting, and general prosperity. This announcement was received by the savages with mingled feelings of surprise, joy, and doubt. They desired to approach nearer to this mysterious being, that they might better satisfy themselves, by scrutiny, as to the reality of her pretensions.

Jemimah, who was an adept in reading men's thoughts, whether savage or civilized, perceived at once that she had nothing to fear from the approach of these awe-stricken Pagans. She knew by their very movement that a favorable impression had already been made upon them; so that she was perfectly self-possessed, and prepared to deepen the veneration with which they approached her. As they formed a semi-circle around her, she solemnly raised her hands toward heaven, threw back her head, closed her eyes, moved her lips as if in holy communion with the Highest; while her countenance, lighted up with celestial ardor, betrayed unearthly emotion, such as man might not look upon and remain unaffected. When the interest of the warriors was thus wrought up to the highest pitch of intensity, her eyes gently opened, her arms waved downwards in concentric circles as if in the act of pouring blessings on their heads, while her lips pronounced these solemn words:—"May the God of Abraham, Isaac, and Jacob pour his blessing upon you! Receive *my* blessing in the name of the Lord." This being interpreted to the Indians, they bowed themselves toward the prophetess, in token of reverence, and silently retired. As these foresters never despatch any grave matter in haste, they chose not to commit themselves further in this affair, until their course of procedure should be settled in general council, when their own prophet, orators, and sage men, should all be present, to act as might be required. Accordingly, runners were despatched to the Genesee reservations, to assemble a full delegation of the wise men of the tribes, at a council-fire, to be held near to Jerusalem.

When the day arrived, Blue-Sky, Corn-Tassel, Red-Jacket, the most illustrious orators of the nation, together with some hundreds of chiefs and warriors, clad in all their gew-gaw splendor, exhibiting the grotesque insignia of their respective tribes, appeared in the council-house, ready to hear the prophet of the pale-faces. But there was one accompanied them, requiring a more particular description. His form was venerable, though emaciated. Time, and mental cares, had ploughed deep furrows in his cheeks, and marked his forehead into ridges. Of his once raven locks, what remained from the bleaching of an hundred *snows*,* was hoary as the feathers of the swan. His form was stooping, his limbs tremulous with age, and his eyes sealed up with blindness.

This was Skós-kajénau, the great prophet of the Senecas, before whom the chieftains bowed down, and the young men hid themselves. Into this grave assembly, Jemimah Wilkinson, clad as I have already described her, made her entrance. A wicker seat had been raised for the two prophets; while the warriors sat upon the ground below and before them. A deep silence, such as I have often witnessed in the Indian council-house,

* Snows, with the Indians, signify winters.

pervaded the assembly for ten minutes, when the Indian prophet above described arose and delivered himself as follows:—"Medicine-man of the Yangees,* *listen!* I am an old man—my eyes can no more look on the sun—my tongue can speak but few words. Soon I *sleep*—who then shall teach my people! They say you come from the sun's-rising, where the shining ones talk with you. Now, we don't know. May be you be good, may be not. I, ancient prophet—seen much. Great Spirit talk to me from the cloud. I inquire after him in my dreams. Sometimes he answer in the sunshine, sometimes in the rain. Sometimes I don't know. If pale-face know more, then me listen. I have done."†

This address being duly interpreted by Parrish, Jemimah felt herself called on to respond. I must not detain the reader by her entire speech. She spake of her supernatural being and divine mission; of the success which had attended her preaching; of the love she bore to a fallen world, and especially the deep interest she felt in the welfare of the Senecas, for whom she travailed in birth, until their redemption should be brought in. Indians rarely take a vote, or resolve as to anything, immediately after listening to a speech. They will not place an important matter on the issue of excited passions. They have a maxim, which, when rendered into English, reads thus:—"Grave things are to be weighed in a cool balance." Hence, on the close of Jemimah's speech, they adjourned the sitting, to deliberate on what they had heard. After due consideration, they sent a messenger, with their interpreter, to the prophetess, notifying to her that it was *one* thing to speak the *great word*, but *another* thing to do the great *wizard-work*; and that, unless the *medicine-man* of the pale-faces could show them a sign, they would not believe on him.

Jemimah's wits were put to the test by this requirement. However great she might fancy her power in the invisible and spiritual world, she felt it was rather difficult to bring out a notable and visible miracle, to the conviction of savages, from the gross materials of nature which surrounded her. She had but short time to consider; so she despatched the messenger with answer that she would soon be with them in council. While walking her room, in some perplexity how next to proceed, dame Nature came up in aid of her *divinity*. Her eyes fell on a large magnet lying beside her compass, which articles she had brought with her from the sea-board, to aid her surveys of the new country; for, be it known to my readers, that even the supernal power of Jemimah Wilkinson did not extend to the making of straight lines and observing due courses, in that extended forest, without the aid of earthly science. Well, with the magnet concealed in her pocket, the "*out-beaming*" once more paraded through the sitting ranks of the chieftains to her wicker-chair, beside the ancient prophet. Another silence pervaded the council-house; all eyes were fixed on the *divinity*. Jemimah arose in that solemn and imposing manner peculiar to herself, and said—"Oh, slow of heart to believe! I might denounce ye as that 'wicked and adulterous generation who seek a sign,' and might add, that 'no sign shall be given ye, but the sign of Jonas the prophet:'

* "Yangees," means white men. Yankee was derived from it.

† I am indebted to Captain Parrish for the substance of this speech.

but, that I may make full proof of this more merciful dispensation; and that ye may believe that I have power over nature, I propose to shake the foundation of the house where we are sitting, and level its timbers to the ground." This being interpreted, a thrill of horror and apprehension shook every warrior's nerves. They begged, through the interpreter, that a less tremendous display be made, and they would believe. Jemimah saw that this was her time; the savages were in alarm, and hence disposed to the marvellous. She extended her hand towards the nearest chieftain, and, in an authoritative tone, demanded his bright scalping knife, which gleamed from beneath his belt. The knife was handed to her. Then, standing up, she waved her right hand, with the magnet in it, like an enchanter's wand, over the heads of the warriors, till, bringing the knife and loadstone in contact, the cohesion of attraction was never better illustrated. The knife, attached by its point to the loadstone, made sudden evolutions in concentric circles, as it glistened and trembled in its whirling, and yet adhered to the point of attraction. "*Hugh!*" (their exclamation of surprise,) burst from every savage bosom. In a moment, they were all upon their feet, leaning forward, in breathless silence and amazed wonder, at the phenomenon before them. The blind prophet had only heard the exclamation. He inquired the cause, which being explained to him by one of the orators, he rose up, bending his sightless eye-balls toward the magic exhibition.

When the "*divinity*" had made ample exhibition of her sorcery, to the satisfaction of herself and amazement of her beholders, she gracefully drew in her arm, disposing of the magnet in her pocket, still holding the knife in her hand, and delivered herself as follows: "As you have seen the scalping-knife arrested by invisible power, and suspended on nothing, it is to admonish you, that the Great Spirit wills the suspension of that bloody instrument, together with the tomahawk and rifle, in the destruction of human life; that you are to hang them up in your wigwams; and no more employ them against your white neighbors. I have come among you as the *Great-Blessing*; see that you refuse not him that speaketh from heaven!"

This interpreted, the aged prophet closed the council as follows: "Wizard of the Yangees, we bow to your supremacy. Red men have become mice; we crawl under your feet. Once we were the wild buffalo—our heart was big—our legs long, and our horn strong. Now our heart is soft, we have become women. The Yangees of the east have slain the Pequot warriors—made the Delawares mad with fire-water: the last of the Mohigans *sleeps*. The Senecas go next. The Great Spirit talks no more with our prophets;—our warriors are cowards; and our wise men are confounded in their talk. By-and-by we have no deer—the tree that shades us will be dry; Yangees will burn up our wigwams, and dig up our graves. We think you a great witch.* Pale faces will hear you. When you see poor Indian fainting, will you give him bread?—when the snow and frost are on his blanket, may he come to your fire? Now we go home: we hang up the scalping-knife at your *great word*: we fight no more: we be good friends: good-bye." At these words the council

broke up; the natives retired in profound reverence of the *medicine-man* of the Yangees; and from that hour to the day of her death, Jemimah Wilkinson exercised a controlling influence over all the Seneca nation, who regarded her as a being having power over nature and divine agency in the invisible world. This homage was not limited to profession merely, it was manifested in offerings and propitiatory presents of furs, venison, and other acceptable things, at every full moon, for many years thereafter. And, in justice to Jemimah be it recorded, that no undue advantage of that influence was ever taken by her; but, on the contrary, she proved herself the Indian's friend, through good report and evil report. Her doors were ever open to these houseless wanderers; and her board spread for their wants. That thousands of them did not become her constant disciples was owing, not to a want of kindness on her part, or veneration on theirs, but to that fugitive, vagabond habit, instinctive in all the Indian race, which renders all efforts at civilization among them unavailing and abortive.

The settlement of Jemimah at Jerusalem was immediately succeeded by a vast influx of emigrants from New England, pouring in, year after year, and month after month, like wave succeeding wave, to obtain a footing in the Genesee country, which was justly considered the garden of America. This brought around the prophetess too stubborn a material to be worked up into her spiritual edifice, as all who will philosophize upon the subject will at once perceive.

It is a mistaken notion that the pioneers of a new country, especially a country of great productiveness, are boorish, illiterate men. The next generation may become so, by a neglect of schools, churches, and other institutions of moral culture and mental training; but the first adventurers are generally bold, enterprising, persevering men, who think and act for themselves, and to the best advantage. Such were the first settlers of Ontario county. Besides, their time was too much occupied in felling the trees, clearing and fencing land, and obtaining bread for the body, to bestow much attention upon ethereal and spiritual matters. Add to this, populous villages, such as Canandaigua, Geneva, Pennyan, &c., &c., were springing up in the immediate neighborhood of Jerusalem, where the literature of the day, newspapers, books, clergymen, lawyers, and scholars soon found their way.

All these causes combined, operated to suspend the spiritual advancement of the new sect, and to limit the *out-pourings* to the established in the faith. Even this was not without its advantages: it enabled the *elect* to extend their improvements, beautify and adorn their village, introduce the mechanic arts, erect mills and manufactories; so, if they were not gathering materials for their moonshine kingdom in the clouds, they were more profitably advancing their interests in the world *that now is*. The result of this thrifty economy was, that in a few years, the same community who wandered off from Rhode Island in destitution and in rags, now excited the envy of the surrounding country, by their superior wealth, and eligible situation. A country squire, by the name of Potter, residing in the neighborhood, who had recently been raised to the bench of common pleas, as one of the judges of Ontario county, having squandered his time and fortune in politics, now cast around him for the means of getting up in the

*Not that the Indians suspected Jemimah to be a woman. "Witch" is a generic term for sorcerer, without distinction of sex.

world. He selected Jemimah's establishment as the theatre of his operations. With this view, he appeared among her worshippers on their Lord's-day meetings, first as a spectator; then as a penitent; and finally as a convert and member in full fellowship. Jemimah rejoiced in spirit at this honorable acquisition, naturally concluding that so influential a disciple as Judge Potter, would induce many others into her fold: but she soon found that she had caught a Tartar—a wolf had come among the lambs of the flock. Potter ingratiated himself with the “divinity;” became her confidential adviser in worldly matters, and her private secretary. Soon he brought his wits to bear upon the old, illiterate, and feeble-minded of the community; and, by what pretence I have never known, he obtained releases from many of them, of their rights as tenants in common, in the whole township.

The reader must know that this township of six miles square, contained no less than 23,040 acres of land; which, at the time of Potter's doings, was worth £90,000 sterling. It was therefore quite a scheme at money-making, to get some third part of these rights condensed into one hand. Matters went on but a short time in this way, before the prophetess, who kept herself well informed as to the doings of her flock, came to be advised of all the particulars of this transaction, from beginning to end. Meeting with her secretary, she mildly rebuked him for his worldly-mindedness; and expressed a hope, that for the honor of the cause in which he had so devoutly embarked, he would return the *worldly* papers in his possession, to the infirm old people from whom he had obtained them. Potter feeling that his designs were accomplished, concluded that a crouching policy was no longer necessary; so he came out boldly to his “divine” mistress, accusing her of hypocrisy and blasphemy, threatening the penalties of the law upon her, if she interfered in the least with the contracts he had made. This was bold language to Deity's vicegerent—such as Jemimah had never yet heard from the mouth of a disciple—such as none but a mind well balanced, and feelings well disciplined, could endure in silence.

Jemimah made no reply; but retiring to her *sanctum sanctorum*, which I may hereafter describe, she rang for her page, who alone was admitted into that sacred retreat. Of what orders she there despatched, or how executed, Potter knew nothing, but the fact, that four robust disciples immediately entered the room where he was, seized him by the arms and legs, and without a word spoken, hurried him out of the house, across the improved land, and so through the forest, till he was fairly off the premises claimed by the elect church. On putting him upon his feet, beyond the limits of their township, his bearers now cautioned him, by the authority of the “vicegerent,” and on peril of his life, never to set foot on the consecrated premises.

Potter too well knew the unbending character of Jemimah, and that her authority was backed up by two hundred men who were subservient to her nod, to treat with indifference the admonition he had received. He consoled himself, however, with this thought, that the papers were in his pocket, and the law open for his remedy. And to law he went—first, by obtaining an indictment against the *elect-lady* for blasphemy; and then by instituting ejectment-suits, to oust the infirm ones who had so improvidently re-leased to him. The

blasphemy case first came on for trial. Great interest was excited throughout the west. The court-house was filled with the wonder-loving multitude. The prophetess declined employing counsel; alleging for plea, that the temporal courts had no jurisdiction over the *person* of the Lord's anointed. This plea being overruled by the court, the attorney-general went on with his statements and proofs. It appeared, indisputably, that the defendant had arrogated divine power to herself; and this was alleged to fall within the definition of blasphemy. It now became Jemimah's turn to speak. She arose with the dignity of an empress. The buzzing multitude was hushed to silence. She observed, that her kingdom was not of this world—hence she should despatch the temporal matter, now before the court, in a single sentence, and hasten to something more important. If, as was alleged, her doctrines were blasphemous, then was the complainant, who was the principal witness, a *blasphemer*; and therefore not a competent witness; “for,” said she, “Judge Potter, on whose testimony the prosecution is founded, has subscribed to all my doctrines, and made no renunciation of his faith.” With this, she assumed a new attitude; lifted up her hands and eyes toward heaven, and poured out a most fervent and passionate ejaculation to her Father in heaven, that the Holy Ghost might descend upon the present audience, and penetrate their hearts with an awful sense of that approaching tribunal, before whom judges and jury, witnesses and spectators, the rich man and Lazarus, must shortly appear, to render an account for the deeds done in the body. Then, assuming an oratorical attitude, she continued with an exhortation so pungent and soul-stirring, so sublimated and overwhelming, that all present seemed to forget they were in a temporal court; and none seemed disposed to interrupt her in her course. She sat down, with the blessings of the multitude upon her; and however they might think her enthusiastic, none doubted her sincerity. The learned judge, in charging the jury, placed the case on two points: First, conceding that to assume the Almighty's prerogatives was blasphemy, in a finite creature; yet, he submitted, whether such an assumption was not evidence of that insane state of mind, which rendered the defendant incapable of committing crime: this was for the jury to determine. Second, should the jury consider the defendant of sufficient reason to commit crime; then they would inquire into the *intent*, or *quo animo* with which the defendant had acted. If her design had been to revile the Deity—to condemn the mission of Jesus Christ—or bring the Christian Scriptures into contempt; then was she guilty of blasphemy. If, on the contrary, she had acted from mistaken views, or religious frenzy—if, in other words, her *motives* were sincere, however erroneous her opinions, she could not be guilty of the crime alleged.

Jemimah's speech, though considered as *traveling out of the record*, by the legal gentlemen present, was still sounding in the ears of the rustic jury, who, without troubling themselves with the judge's learned charge, proclaimed their verdict of acquittal, without leaving their box.

Potter was much annoyed at this result; but he derived comfort in the thought, that nothing could defeat his recovery of the land, of which he held the paper-title. The links in the chain, to his apprehension, were too simple and direct to involve

any doubt as to his success. 1. The immemorial Indian right to the country, by the gift of God. 2. Indian conveyance to Oliver Phelps, by solemn treaty. 3. Grant from Phelps to Jemimah Wilkinson, and her heirs and assignees forever. 4. Jemimah's deed to her disciples. 5. Sundry of the disciples' re-leases to Hiram Potter. "Thank God," says Hiram, "this is matter of law, in which the old hypocrite's prayers and tears can avail her nothing." Well, at length the trial came on. The presiding judge was no other than the late chancellor, Kent, whose brilliant intellect and forensic science have won him renown, even in Westminster Hall. In this, as in the other case, Jemimah declined other counsel. She sat in all the majesty of royalty, facing two of the most eminent counsellors in the state, whom Potter had retained, and imported from the city, to make doubly sure in the cause. The case was opened, the documentary evidence exhibited, which left no doubt of the plaintiff's right. The learned judge, in commiseration of the defendants, and regarding Jemimah as necessarily unqualified as counsel for them, humanely proposed to assign legal gentlemen to assist in the defence, who, he supposed, would be better able to measure swords with the champions from New York, than a Rhode Island spinstress. The prophetess felt her dignity touched by the suggestion; and she thus addressed the court: "Hast thou never read, that He taketh the wise in his own craftiness? That God hath chosen the weak things of this world to confound the wise, and foolish things to bring to nought the wisdom of the mighty?"

"Well, well," said the judge; "but here is a connected chain of title that ties up your hands, and binds you hand and foot."

"Be it so," said Jemimah; "but is it not written, 'I will break their chains from off their neck, and cast their bands asunder, that my people may go free?' Judge Kent, hast thou faith? 'All things are possible to him that believeth.'"

At this, she drew from her large pocket a most formidable parchment, having appended to it two hundred seals, with the signature of all her followers, exemplified by the great seal of the state, certifying that it had been duly recorded in the Secretary of State's office, long previous to Potter's re-leases. The instrument bore even date with the deeds which she had given to her people, and was explanatory of those deeds. It went to constitute Jemimah Wilkinson sole trustee for her followers, in the whole of their lands, and to re-invest the title in her, as such trustee. It referred to the said deeds, and went on to modify them thus: That the interest in the lands, granted by said deeds, should be held no longer than the subscribers remained in full fellowship in the *elect-church*; and that any grant, sale, or *re-lease* of said lands, by any member, should operate as a forfeiture of his right: that nothing should *pass to the purchaser*, by any such sale, but the land should revert to the said Jemimah.

This instrument the prophetess read out, in the hearing of the whole court and bar, in a firm voice, and with most provoking *nonchalance*; while Potter and his counsel were agitated in every nerve, and in a fever of *nonplusment*. The court decided that this instrument, being executed at the same time with the deeds to the disciples, was to be taken as part and parcel of the same transaction, and to be construed in connexion with the deeds; the effect of which was, to reinvest Jemimah with the title

as trustee, and to render the estates inalienable by any act of her followers.

This turned the tables upon poor Potter, who left the court in disgrace, with a heavy bill of costs upon his shoulders. He was soon thereafter impeached for his conduct in this affair, deposed from his office as judge, and sent back to his own insignificance. It is due to the magnanimity of Jemimah to say, that she refused to come forward as a witness against her quondam disciple, on his impeachment; observing, that "she pitied poor Potter, whose bad heart was a punishment quite sufficient for him; and she would not place the weight of her finger in the scale, to increase that punishment."

It was intended to note the progress of the *elect* hierarchy, to draw out their rules, their domestic economy, their distinctive and peculiar usages, &c. &c.; but these would fill a volume. A few more remarks must close this article.

However presumptuous and arrogant were the pretensions of the prophetess as a "*divine*" messenger, they never seem to have led her into any immoral or unjust conduct. In her abounding wealth she was the same plain, devout nursing mother to her flock, as when surrounded by poverty and want. She took no advantage of her power in temporal matters; but caused her meanest disciple to fare as well as his "*divine*" mistress; yes, more, she submitted to fastings and privations, which were never imposed upon her servants. Her hospitality to strangers and visitants, was without a parallel. On Sundays, when many of the surrounding gentry came out to spend an hour in her chapel, as a matter of pastime, she never suffered them to depart without a bountiful dinner, served up in her dining hall in a neat and most inviting manner. The writer of this article was once present upon such an occasion.

When service was closed, which was performed by Jemimah in a sitting posture, on an elevated stand, she invited all strangers and visitants to *take bread* with her, before their departure; then retiring into a screened alcove, at the back of the stand, a small bell was heard—then the clatter of many footsteps from the kitchen to the dining hall; and finally the great bell, in announcement of dinner.

In coming into the room, we congratulated ourselves that we were to dine with the great "*viceregent*;" for she stood, covered with her broad-brimmed hat, at the head of the table; but we were mistaken. All standing before their plates, she spread out her hands, blessed the food for our use, in the name of the Lord; then waving her hand in token of adieu, retired to her *sanctum sanctorum*.

The dinner was excellent, the cheer better becoming a nobleman's mansion, than the spiritual establishment of a humble prophetess. We saw no more of Jemimah; but we left her hall with satiated appetites, full of benevolence for all mankind, and with the best of wishes for the prosperity and happiness of the prophetess of Jerusalem.

A sentiment had long prevailed among her people, that Jemimah was to live forever. Whether this was directly inculcated in her teachings, or was an inference drawn from the fact that she had once died in Rhode Island, and was now moving about in her resurrection body, I cannot assert; yet the impression was universal among her flock, that she was to die no more. However, nature was not to be balked in this way. The "keepers

of the house began to tremble;" advancing age admonished the "vicegerent" that she must by and by abdicate her spiritual kingdom, and leave her lambs without a shepherd. To prepare them for this event, she announced that it was needful for her to go away, that she might send the Comforter, and prepare for them a habitation in the New Jerusalem above; whence she would return, and whither they should go up with her, to stand on the sea of glass, with the hundred and forty and four thousand, to reign forever and ever! She charged them not to weep for her, as those who had no hope; that though she should sleep, she should revive again; for, "I desire," said she, "there may be no funeral at my departure, no hearse, no coach, no pomp, no parade; but the blessing of them who loved me on earth, and are following me to the New Jerusalem in heaven."

These injunctions were strictly kept; she stole away from life, unattended, unannounced, unwept. The disciples hid her body in the valley where she had died; but, as in the case of the Jewish lawgiver, "no man knoweth of her sepulchre, unto this day."

This event happened in 1820. Fifteen years afterwards, the writer of this article, in his travels through the country, visited for the last time the habitation of the prophetess. The scene was changed; Jerusalem's glory had departed. Her sun had set behind a cloud.

He was shown her late establishment, and among the rest the "*sanctum sanctorum*," of which mention has been made. It was a snug parlor, entered but by one door, viz., through the alcove in rear of the chapel. On other sides it was surrounded by sleeping rooms, lighted by a sky-light, ornamented by pictures of apostles and saints, and furnished with cushioned chairs, and a respectable theological library.

Not an article in the room had been removed from the day of her death. There were her dressing-case, compass, magnet, thimble, needles, &c., besides a ponderous quarto Bible, well-thumbed and marked, lying open on the table. But death had made fearful ravages among her followers. A mere fragment remained to tell that this once had been Jerusalem; and that fragment consisted of the mere effigies of aged men and women, whose bending forms and whitened locks betokened them the lingering remnants of a bygone age, waiting for the summons to depart, and join their leader in the land of forgetfulness. The scenes around me brought painful reflections that here was the end of human aspirations, human genius, human hopes, unguided by the standard of revelation.

Who that shall contemplate Jemimah Wilkinson in her genius, in her probity, in her constancy, in her perseverance and unwavering course, will not regret that a mind so original and powerful, a heart naturally so sincere, an imagination so vivid and creative, by which she might have adorned the higher circles of life, shedding a glory on her sex, should become the temple of a false faith, and a prey to RELIGIOUS FANATICISM?

SCRIPTURE NAMES.—The Sykes family "were always fond of Scripture names, on the side of both the fathers and mothers, Mr. Dixon. I think it was an aunt or a cousin, but I'm sure it was n't an uncle, on my side—the Dabekicks—who, having four sons christened Matthew, Mark, Luke, and John, called the fifth Acts."

From the *Athenæum*.

Memoirs of the Reign of King George III. By HORACE WALPOLE. Now first published from the Original MSS., with Notes, by Sir Denis le Marchant, Bart. Vols. III. and IV. Bentley.

IN our review of the first two volumes of these memoirs, we had occasion to notice the little attention that had been paid to the history of the reign of George III. previous to the commencement of the American war, and to express a doubt whether the real nature of the political changes wrought between 1760 and 1776, had ever been fairly brought before the public. One source of difficulty is obvious—contemporaries were as much perplexed by what passed around them as we are; and, to quote a single instance, Walpole in the volumes before us gives the most contradictory accounts of the relations between George III. and the Earl of Bute; in general insisting that the favorite guided all the secret springs of royal policy, but ever and anon insinuating a suspicion that the supposed influence was mere moonshine, and that Bute, so far from being a favorite, was, after his sudden retirement from office, personally disliked by the sovereign. Inconsistent as these views may appear, there are abundant facts to justify both. Bute retained political influence after having quitted office, but he did not owe this influence to continued personal regard, for he ceased to be the king's favorite at least as soon as he ceased to be the king's minister. Lord Brougham asserts that George III. either discovered or had strong reason to suspect the disgraceful nature of the *liaison* between Bute and the Princess Dowager of Wales, and that this was the cause of his never seeking to recall the earl, whom at his accession he had delighted to honor. But though Bute was discarded, the policy which he and the Princess Dowager had imprinted on the king's mind when a boy was implicitly followed, and hence statesmen were persuaded that personal influence prevailed when only past counsels were followed.

In the analogous case of the conduct of Louis XIV., during the years immediately succeeding his minority, there is a superfluity of evidence that he knew and detested his mother's intrigues with Cardinal Mazarin; but that, believing the cardinal's line of policy identified with the assertion of regal supremacy, he supported the minister while he disliked the man. The parallel goes farther, for the words ascribed to Louis XIV. when he heard of the death of Mazarin, have a strange identity with those ascribed to George III. on receiving the resignation of Lord Bute. Still many circumstances which occurred after Bute's ostensible abandonment of public life, want explanation; he certainly possessed some secret which gave him power, and there is plausibility in the conjecture that this secret was the constitutional tendency to insanity which the king is now known to have exhibited in early youth. Nearly a century has elapsed since the accession of George III., and it is only now that circumstances become known which lead to the belief that his long reign should be severed from his personality, and divided into the reigns of his mother and his wife.

The third volume of Walpole's *Memoirs* introduces us to the history of Chatham's second administration, which Burke has immortalized by the well-known description of its component parts,

for neither he nor anybody else could depict it as a totality. "Chatham," said the orator, "made an administration so chequered and speckled; he put together a piece of joinery so crossly indented and whimsically dovetailed; a cabinet so variously inlaid; such a piece of diversified mosaic, such a tessellated pavement without cement; here a bit of black stone and there a bit of white; patriots and courtiers; king's friends and republicans; whigs and tories; treacherous friends and open enemies; that it was, indeed, a very curious show, but utterly unsafe to touch and unsure to stand upon." In truth, Chatham and George III. both aimed at the same end by different means; they wished to emancipate the crown and the country from the thralldom in which both were held by the combinations of the great whig families, and Chatham hoped to succeed by getting together the "waifs and strays" of the several aristocratic sections. The course which the king adopted to attain the same end will come before us in another place. Chatham might have succeeded if his health had allowed him to drill the recruits he had collected from such a diversity of quarters; but, as Burke justly observes, "when his face was hid but for a moment, his whole system was on sea without chart or compass." The best exemplification of this confused state of affairs was the strange exhibition of "the rival luminary," Charles Townshend, second only to Chatham in eloquence and ability, on the very important question of the relations between the British cabinet and the East India Company. In consequence of the grave questions which had arisen, Dyson moved for leave to bring in a bill for regulating the making of dividends by the directors to the East India proprietors. The entire scene that followed is without a parallel:—

"It was on that day, and on that occasion, that Charles Townshend displayed in a latitude beyond belief the amazing powers of his capacity, and the no less amazing incongruities of his character. He had taken on himself, early in the day, the examination of the Company's conduct; and in a very cool sensible speech on that occasion, and with a becoming consciousness of his own levity, had told the house that he hoped he had atoned for the inconsideration of his past life by the care he had taken of that business. He had scarce uttered this speech, but, as if to atone for that (however false) atonement, he left the house and went home to dinner, not concerning himself with Dyson's motion that was to follow. As that motion was, however, of a novel nature, it produced suspicion, objection and difficulties. Conway being pressed, and not caring to be the sole champion of an invidious measure, that was in reality not only in Townshend's province, but which he had had a principal hand in framing, sent for him back to the house. He returned about eight in the evening, half-drunk with champagne, and more intoxicated with spirits. He rose to speak without giving himself time to learn, and without caring what had been in agitation, except that the motion had given an alarm. The first thing he did, was to call God to witness that he had not been consulted on the motion,—a confession implying that he was not consulted on a business in his own department; and the more marvellous, as the disgrace of which he seemed to complain or boast of, was absolutely false. There were sitting round him twelve persons who had been in consultation with him that very morning, and with his assistance had drawn up the motion

on his own table, and who were petrified at his most unparalleled effrontery and causeless want of truth. When he sat down again, Conway asked him softly, how he could affirm so gross a falsehood? He replied carelessly, 'I thought it would be better to say so;' but before he sat down, he had poured forth a torrent of wit, parts, humor, knowledge, absurdity, vanity, and fiction, heightened by all the graces of comedy, the happiness of allusion and quotation, and the buffoonery of farce. To the purpose of the question he said not a syllable. It was a descant on the times, a picture of parties, of their leaders, of their hopes and defects. It was an encomium and a satire on himself; and while he painted the pretensions of birth, riches, connexions, favor, titles; while he affected to praise Lord Rockingham, and that faction, and yet insinuated that nothing but parts like his own were qualified to preside; and while he less covertly arraigned the wild incapacity of Lord Chatham, he excited such murmurs of wonder, admiration, applause, laughter, pity, and scorn, that nothing was so true as the sentence with which he concluded, when speaking of government; he said it was become what he himself had often been called, a weathercock. Such was the wit, abundance, and impropriety of this speech, that for some days men could talk or inquire of nothing else. 'Did you hear Charles Townshend's champagne speech?' was the universal question. For myself, I protest it was the most singular pleasure of the kind I ever tasted. The bacchanalian enthusiasm of Pindar flowed in torrents less rapid and less eloquent, and inspires less delight, than Townshend's imagery, which conveyed meaning in every sentence. It was Garrick writing and acting extempore scenes of Congreve. A light circumstance increased the mirth of the audience. In the fervor of speaking, Townshend rubbed off the patch from his eye, which he had represented as grievously cut three days before; no mark was discernible, but to the nearest spectators a scratch so slight, that he might have made, and perhaps had made, himself, with a pin. To me the entertainment of the day was complete. He went to supper with us at Mr. Conway's, where, the flood of his gaiety not being exhausted, he kept the table in a roar till two in the morning, by various sallies and pictures, the last of which was a scene in which he mimicked inimitably his own wife, and another great lady with whom he fancied himself in love, and both whose foibles and manner he counterfeited to the life. Mere lassitude closed his lips at last, not the want of wit and new ideas."

Charles Townshend was a resolute supporter of the right of the British Parliament to impose taxes upon the American colonies, though member of a cabinet in which the most important though not the most numerous section, including Chatham himself, was pledged to the principle, that "taxation without representation constituted tyranny;" his excuse for looking to the colonies was the refusal of the country-gentlemen to allow a shilling in the pound to be added to the land-tax, and the consequent necessity of supplying the deficiency in the revenue from some other source. Walpole deals out caustic sarcasm on the supporters and on the opponents of the tax; he satirizes the ministers, the Parliament, the English, and the Americans, reserving for the latter his concluding reflections, which might find more than one application in the present day:—

"*Authority never measures liberty downwards.* Rarely is liberty supposed to mean the independence of those below us; it is our own freedom from the yoke of superiors. The peer dreads the king, the commoner the peer; the Americans the Parliament. Each American trader thought himself a Brutus, a Hampden, while he wrestled with the house of commons; yet his poor negroes felt that their master, Brutus, was a worse tyrant than Nero or Muley Ishmael. Had the Parliament of England presumed by one godlike act to declare all the slaves in our colonies freemen, not a patriot in America but would have clamored against the violation of property, and protested that to abolish the power of imposing chains was to impose them. O man! man! dare not to vaunt your virtue, while self-interest lurks in every pore!"

Lord Chatham's crazy cabinet seemed every instant on the point of dissolution from the want of cohesion in the materials, and his lordship's own conduct greatly added to the perplexities of his colleagues; he retired to his country-seat, and afterwards to Bath, where he refused to see any person, to transact any business, or to offer any suggestion for the guidance of public affairs. The nominal premier, the Duke of Grafton, in vain sought for commands; the king, with the same ill success, petitioned for advice; the rest of the cabinet feared to move except at the bidding of the master, and as the oracle was silent, the affairs of government were brought to a complete "dead-lock." Grafton opened negotiations with the Bedford and Rockingham parties, believing that the only chance of establishing a ministry must be derived from a new combination of the great families. A meeting to frame such a combination was held in October, (1767,) and it broke up in most admired confusion. Walpole's sketch of the scene is amusing:—

"On the 20th, a meeting was held at the Duke of Newcastle's, of Lord Rockingham, the Duke of Richmond and Dowdeswell, with Newcastle himself, on one part; and of the Duke of Bedford, Lord Weymouth, and Rigby on the other. The Duke of Bedford had powers from Grenville to act for him, but did not seem to like Lord Rockingham's taking on himself to name to places. On the latter asking what friends they wished to prefer, Rigby said, with his cavalier bluntness, 'Take the Court Calendar and give them one, two, three thousand pounds a year.' Bedford observed that they had said nothing on measures: Mr. Grenville would insist on the sovereignty of this country over America being asserted. Lord Rockingham replied, he would never allow it to be a question whether he had given up this country: he never had. The duke insisted on a declaration. The Duke of Richmond said, 'We may as well demand one from you, that you never will disturb that country again.' Neither would yield. However, though they could not agree on measures, as the distribution of places was more the object of their thoughts and of their meeting, they reverted to that topic. Lord Rockingham named Mr. Conway; Bedford started; said, he had no notion of Conway; had thought he was to return to the military line. The Duke of Richmond said, it was true Mr. Conway did not desire a civil place: did not know whether he would be persuaded to accept one; but they were so bound to him for his resignation, and thought him so able, they must insist. The Duke of Bedford said, Conway was

an officer *sans tache*, but not a minister *sans tache*. Rigby said not one of the present cabinet should be saved. Dowdeswell asked, 'What! not one!'—'No.'—'What! not Charles Townshend?' 'Oh!' said Rigby, 'that is different; besides, he has been in opposition.' 'So has Conway,' said Dowdeswell; 'he has voted twice against the court, Townshend but once.' 'But,' said Rigby, 'Conway is Bute's man.' 'Pray,' said Dowdeswell, 'is not Charles Townshend Bute's?' 'Ay, but Conway is governed by his brother Hertford, who is Bute's.' So is Charles Townshend by his brother,* who is Bute's.† 'But Lady Ailesbury is a Scotch woman.' 'So is Lady Dalkeith.‡' From this dialogue the assembly fell to wrangle, and broke up quarrelling. So high did the heats go, that the Cavendishes ran about the town, publishing the issue of the conference, and taxing the Bedfords with treachery."

It appears probable that Chatham was weary of his patchwork cabinet, and intended to construct a new ministry with Charles Townshend as first lord of the treasury, but that erratic genius died on the 4th of September, and was succeeded by Lord North as chancellor of the exchequer. The ministers were soon after strengthened by the accession of the Bedfords; but what they gained in votes they lost in talent, Conway having resigned to make room for the leaders of the new contingent. The administration thus formed, was neither respected abroad nor obeyed at home. In spite of the *prestige* which still adhered to Chatham's name, the French invaded Corsica, receiving almost with contempt the remonstrances of the English ambassador. A single anecdote recorded by Walpole, will sufficiently show the inefficiency of the government at home, even in the metropolis:—

"A dispute having arisen between the coal-workers and the coalheavers, the latter of whom were chiefly Irish—nay, some of them Whiteboys, an act of Parliament had passed the last year, subjecting the coalheavers to the jurisdiction of the alderman of the ward; an office had been erected, and one Green, who kept an alehouse, had been constituted their agent. Houston, a man who wanted to supplant Green, had incensed the coalheavers against him, and they threatened his destruction. Apprised of their design, he every night removed his wife and children out of his house. One evening he received notice that the coalheavers were coming to attack him. He had nobody with him but a maid-servant and a sailor, who by accident was drinking in the house. Green asked the sailor if he would assist him? 'Yes,' answered the generous tar, 'I will defend any man in distress.' At eight the rioters appeared, and fired on the house, lodging in one room above two hundred bullets; and when their ammunition was spent, they bought pewter pots, cut them to pieces, and fired them as ball. At length with an axe they broke out the bottom of the door; but that breach the sailor defended singly; while Green and his maid kept up a constant fire, and killed eighteen of the besiegers. Their powder and ball being at last wasted, Green said he must make his escape: 'for you,' said he to the friendly

* George Lord Townshend.

† Lady Caroline Campbell, wife of General Conway.

‡ Lady Caroline Campbell, wife of Charles Townshend. These two ladies were daughters of two Johns Dukes of Argyll, and were widows of the Earls of Ailesbury and Dalkeith.

sailor, 'they will not hurt you.' Green, retiring from the back room of his house, got into a carpenter's yard, and was concealed in a sawpit, over which the mob passed in their pursuit of him, being told he was gone forwards. I should scarce have ventured this narrative, had not all the circumstances been proved in a court of justice. Yet how many reflections must the whole story create in minds not conversant in a vast capital—free, ungoverned, unpoliced, and indifferent to everything but its pleasures and factions! Who will believe that such a scene of outrage could happen in the residence of government!—that the siege lasted nine hours, and that no guards were sent to the relief of the besieged till five in the morning! Who will believe that while such anarchy reigned at one end of the metropolis, it made so little impression at the court end that it was scarce mentioned! Though in London myself, all I heard was, that a man had been attacked in his house, and had killed three of the rioters. Nor were the circumstances attended to, till the trial of Green for murder, of which he was honorably acquitted, divulged his, his maid's and the sailor's heroism. Yet did not the fury of the colliers cease, though seven of them were taken and executed. Green was forced to conceal himself from their rage, but his sister giving a supper to her friends for joy of her brother's safety, her house was attacked by those assassins, their faces covered with black crape, who tore her into the street, and murdered her. Yet, perhaps, of all the circumstances of this tragedy, not one was so singular from the display of so great a mind as the indifference of the sailor, who never owned himself, never claimed honor or recompense for his generous gallantry. As brave as the Cœles of fabulous Rome, his virtue was satisfied with defending a man oppressed; and he knew not that an Alexander deserved less fame than he, who seemed not to think that he deserved any."

In the October of 1768, Chatham resigned, leaving his former colleagues engaged in a disgraceful squabble with Wilkes, whom they could only reach "by piercing the sides of the constitution." In the midst of the confusion arising out of the Middlesex election, when Lutterell, though left in a miserable minority by the electors, was declared the sitting member by the house of commons, Chatham suddenly appeared at court:—

"He was perfectly well, and had grown fat. The Duke of Grafton had just time to apprise the king of this mysterious visit. The king was very gracious, and whispered him to come into the closet after the levee, which he did, and stayed there twenty minutes. Much silence was observed on what passed; though by degrees it was affirmed that the conversation was only general and indifferent. Yet hints were dropped that the king, sounding Lord Chatham on the Middlesex election, the opinion he gave was not favorable to his majesty's wishes. The active part taken by Lord Shelburne, Beckford, and Calcraft, made this greatly probable; and his lordship's subsequent conduct corroborated the idea. Still was Lord Chatham very desirous of recovering his power; and it was not his style to be harsh in the closet. It was remarked, too, that, not to embitter his reception, he had come when Lord Temple was detained at Stowe, by entertaining there several of the foreign ministers. Lord Chatham lingered affectedly, in the outward room, after his audi-

ence, as if to display the recovery of his health and understanding. To the Duke of Grafton and the Bedfords he was awkward and cool; embraced Lord Granby and General Harvey, (a personal military favorite of the king,) and was very civil to Lord Hertford and Mr. Conway. In the evening he returned to Hayes."

If Chatham's design was to offer himself as a mediator to the court, which is probable, he could not have met with much encouragement, for he soon after appeared, with not a little of his former vigor, as the great leader of the opposition. So soon as parliament assembled he proposed that the house of lords should investigate the circumstance of the Middlesex election; and though this was rejected as obviously inconsistent with the privileges of the lower house, those privileges were treated with very little respect either by Chatham or those who supported him in the debate.

The ministerial majority of the commons had to endure harsher treatment in their own house than that above noticed:—

"Burke on a former day had attacked the house itself, and hinted that the majority was so guilty that they did not dare to take notice of the insults offered to them, and the reproaches cast on them. On the report he added, that he was conscious he had deserved to be sent to the Tower for what he had said; but knew the house did not dare to send him thither. Sir George Saville adopted and used the same language. Lord North took notice of it, but said he supposed Sir George had spoken in warmth. 'No,' replied Saville coolly, 'I spoke what has been my constant opinion; I thought so last night, I thought the same this morning. I look on this house as sitting illegally after their illegal act [of voting Lutterell representative for Middlesex.] They have betrayed their trust. I will add no epithets,' continued he, 'because epithets only weaken: therefore I will not say they have betrayed their country corruptly, flagitiously, and scandalously, but I do say they have betrayed their country; and I stand here to receive the punishment for having said so.' Mr. Conway, sensible of the weight of such an attack from a man so respectable, alarmed at the consequences that would probably attend the punishment of him, and firm in his own irreproachable virtue, took up the matter with temper, wisdom and art, and showed the impropriety and indecency of such language; and by that address prevented Saville from repeating the provocation, and soothed the house into sober concern, before any reciprocal heat had been expressed against the offender: for though Serjeant Glynn asserted that when the house had been in the wrong, it was right to say so; and though Charles Fox replied with much applauded fire, moderation had made its impression, and a scene was avoided that might have had the most fatal termination. Not only was Sir George Saville composed and ready to provoke the whole wrath of the legislature, but had the ministers dared to send him to the Tower, the Cavendishes, and the most virtuous and respectable of his friends, would have started up, would have avowed his language and would have demanded to share his imprisonment. A dozen or twenty such confessors in the heart of a tumultuous capital would have been no indifferent spectacle: the great northern counties were devoted to them. Then, indeed, the moment was serious! Fortunately there were none but subordinate ministers in the house of common, not one of whom chose to cast so decisive a die. The

house sat silent under its ignominy—a punishment well suited to its demerits: and the sword was not called in to decide a contest in which liberty and the constitution would probably have been the victims. This was in effect the critical day; for though the struggle continued, and not without material convulsions, yet the apprehensions of rougher commotions wore away. Losses, dissensions, profligacy, treachery, and folly dissipated great part of the opposition, and began

*Ex illo fluere, ac retro sublapsa referri
Spes Danaum!"*

Among the many anomalies in this debate, we may notice as the most extraordinary that the best, and at the same time the most violent speech delivered against the government was that of the Lord Chancellor, Camden. He of course tendered his resignation, but there was some delay in accepting it, because the ministers were unable to find a successor. At length, Mr. Yorke, after having twice refused, was induced, by the king's personal solicitations, to accept the office. The sad result is thus related by Walpole:—

"He had been with the king over night, (without the knowledge of the Duke of Grafton,) and had again declined; but being pressed to reconsider, and returning in the morning, the king had so overwhelmed him with flatteries, entreaties, prayers, and at last with commands and threats, of never giving him the post if not accepted now, that the poor man sunk under the importunity though he had given a solemn promise to his brother, Lord Hardwicke and Lord Rockingham, that he would not yield. He betrayed, however, none of the rapaciousness of the times, nor exacted but one condition, the grant of which fixed his irresolution. The chancellor must of necessity be a peer, or cannot sit in the house of lords. The coronet was announced to Yorke; but he slighted it as of no consequence to his eldest son, who would, probably, succeed his uncle, Lord Hardwicke, the latter having been long married, and having only two daughters. But Mr. Yorke himself had a second wife, a very beautiful woman, and by her had another son. She, it is supposed, urged him to accept the chancery, as the king offered, or consented, that the new peerage should descend to her son, and not to the eldest. The rest of his story was indeed melancholy, and his fate so rapid as to intercept the completion of his elevation.* He kissed the king's hand on the Thursday: and from court drove to his brother, Lord Hardwicke's—the precise steps of the tragedy have never been ascertained. Lord Rockingham was with the earl. By some it was affirmed, that both the marquis and the earl received the unhappy renegade with bitter reproaches. Others, whom I rather believe, maintained that the marquis left the house directly, and that Lord Hardwicke refused to hear his brother's excuses, and retiring from the room, shut himself into another chamber, obdurately denying Mr. Yorke an audience. At night it was whispered that the agitation of his mind, working on a most sanguine habit of body, inflamed of late by excessive indulgence both in meats and wine, had occasioned the bursting of a bloodvessel; and the attendance of surgeons was

* For the Great Seal was never affixed to the patent of his barony, and the king had not the generosity to make atonement to his family by confirming the promise, for having forced the unhappy person to take a step that cost him his life.

accounted for, by the necessity of bleeding him four times on Friday. Certain it is that he expired on the Saturday between four and six in the evening. His servants, in the first confusion, had dropped too much to leave it in the family's power to stifle the truth; and though they endeavored to color over the catastrophe by declaring the accident natural, the want of evidence and of the testimony of surgeons to color the tale given out, and which they never took any public method of authenticating, convinced everybody that he had fallen by his own hand—whether on his sword, or by a razor, was uncertain."

To this narrative Walpole subsequently added the following note:—

"Very few days after the accident Mr. Edmund Burke came to me in extreme perturbation, and complained bitterly of the king, who, he said, had forced Mr. Yorke to disgrace himself. Lord Rockingham, he told me, was yet more affected at Mr. Yorke's misfortune, and would, as soon as he could see Lord Hardwicke, make an account public, in which the king's unjustifiable behavior should be exposed. I concluded from his agitation that they wanted to disculpate Lord Hardwicke and Lord Rockingham of having given occasion to Mr. Yorke's despair. They found it prudent, however, to say no more on the subject. An astonishing and indecent circumstance that followed not very long after that tragedy was, that Lord Hardwicke, whose reproaches had occasioned his brother's death, attached himself to the court, against Lord Rockingham, and obtained bishopricks for another of his brothers!"

After this catastrophe, no chancellor could be found, and the great seal was put in commission. The Duke of Grafton, long weary of the office of premier, which kept him from his horses and his mistresses, and only rewarded him for the loss of these favorite associates by setting him up as the principal mark for the arrows of a vindictive opposition, followed the advice ironically given him by Junius, and resigned his office. Lord North succeeded to the office of premier, and formed the cabinet which must ever be gibbeted in history, for its conduct in reference to America.

Viewing these matters impartially, at the distance of nearly a century, we cannot blame the king for having sought to emancipate the crown and the country from the domination of "the great families," though we cannot approve the means employed. George III. sought to exalt prerogative on the ruins of aristocratic power, and hence he had, from the beginning of his reign, formed a party for himself, which took the name of "the king's friends;" for nearly twenty years Lord Bute bore the blame of all the intrigues conducted by this party, of which, in truth, he was the founder, but over which he scarcely, from the beginning, exercised any control. The king was not sorry to see the opposition on a wrong scent, and he designedly led them farther astray by his manifestations of pretended personal regard to those of whom he was most anxious to be relieved. "The power behind the throne, greater than the throne itself," against which it was the fashion with Lord Chatham and others to declaim, was simply George III. in a closet with a backstairs, undoing all that he had pretended to do with his ministers in the council-chamber. It was this secret spirit of intrigue for the indulgence of personal feelings, most frequently of personal animosities, which prevented the king from ever at-

taining what was really a beneficial object, the overthrow of the oligarchy; and but for the courage of Lord North, he must have capitulated to the Grenvilles, the Rockinghams, or the Bedfords, or surrendered to some combination of the factions at discretion, when Grafton resigned. North saved the crown from this degradation:—

“Lord North had neither connexions with the nobility, nor popularity with the country, yet he undertook the government in a manly style, and was appointed First Lord of the Treasury on the 29th, with only one day to intervene before it would be decided whether he would stand or fall. Could he depend on men whom he had not time to canvass? Was it not probable that the most venal would hang off till they should see to which side the scale would incline? Yet Lord North plunged boldly into the danger at once. A more critical day had seldom dawned. If the court should be beaten, the king would be at the mercy of the opposition, or driven to have recourse to the lords—possibly to the sword. All the resolutions on the Middlesex election would be rescinded, the parliament dissolved, or the contest reduced to the sole question of prerogative. Yet in the short interval allowed, Lord North, Lord Sandwich, Rigby, and that faction on one side, the Scotch and the Butists on the other hand, had been so active, and had acted so differently from what the Duke of Grafton had done, that at past twelve at night the court proved victorious by a majority of forty.”

Walpole's character of Lord North presents essentially the same features as Lord Brougham's description of that minister, but has greater consistency of parts and more similarity to life in portraiture:—

“He had knowledge, and though fond of his amusement, seemed to have all necessary activity till he reached the summit. Yet that industry ceased when it became most requisite. He had neither system, nor principles, nor shame; sought neither the favor of the crown nor of the people, but enjoyed the good luck of fortune with a gluttonous epicurism that was equally careless of glory and disgrace. His indolence prevented his forming any plan. His indifference made him leap from one extreme to another; and his insensibility to reproach reconciled him to any contradiction. He proved as indolent as the Duke of Grafton, but his temper being as good as the duke's was bad, he was less hurt at capital disgraces than the duke had been at trifling difficulties. Lord North's conduct in the American war displayed all these features. He engaged in it against his opinion, and yet without reluctance. He managed it without foresight or address, and was neither ashamed when it miscarried, nor dispirited when the crown itself became endangered by the additional war with France. His good humor could not be good nature, for at the beginning of the war he stuck at no cruelty, but laughed at barbarities with which all Europe rung. It could not be good sense, for in the progress he blushed at none of the mischiefs he had occasioned, at none of the reproaches he had incurred. Like the Duke of Grafton, he was always affecting a disposition to retire, yet never did. Unlike the duke, who secured no emoluments to himself, Lord North engrossed whatever fell in his way, and sometimes was bribed by the crown to promote acts, against which he pretended his conscience recoiled—but it never was delicate when profit was in the oppo-

site scale. If he had ambition, it was of very mean complexion, for he stooped to be but a nominal prime minister, and suffered the king's private junto to enjoy the whole credit of favor, while, between submission and laziness, Lord North himself was seldom the author of the measures in which he bore the principal part. This passive and inglorious tractability, and his being connected with no faction, made him welcome to the king: his having no predominant fault or vice recommended him to the nation, and his good humor and wit to everybody but to the few whom his want of good breeding and attention offended. One singularity came out in his character, which was, that no man was more ready for extremes under the administration of others, no man more temperate than Lord North during his own:—in effect, he was a man whom few hated, fewer could esteem. As a minister he had no foresight, no consistence, no firmness, no spirit. He miscarried in all he undertook in America, was more provident than unfortunate, less unfortunate than he deserved to be. If he was free from vices, he was as void of virtues; and it is a paltry eulogium of a prime minister of a great country, yet the best that can be allotted to Lord North, that, though his country was ruined under his administration, he preserved his good humor, and neither felt for his country nor for himself. Yet it is true, too, that he was the least odious of the ministers with whom he acted; and though servile in obedience to a prince who meant so ill, there was reason to think that Lord North neither stimulated, nor was more than the passive instrument of the black designs of the court.”

Sir Denis le Marchant, in his notes on this passage, calls attention to a fact, first revealed to the English public by the *Athenæum*, that Lord North disapproved of the policy pursued towards America, that he wished to resign his office, and only kept in place by the king's personal solicitations. The important letter which we published, and circumstances connected with the publication which many of our readers will recollect, led to a reasonable expectation that Lord North's correspondence would, ere this, have been before the public, and we cannot conjecture any plausible reason for its continued suppression. That correspondence would, we have reason to believe, show that the evils attributed to the personal influence of the Earl of Bute, came from a different quarter, and indeed this did not escape the sagacity of Walpole:

“If the earl himself did not preserve the same degree of credit with his majesty, the king acted on the plan in which he had been initiated, and had cunning enough, as most princes have, to employ and trust those only who were disposed to sacrifice the interests of the country to the partial and selfish views of the crown; views to which his majesty so steadily adhered on every opportunity which presented itself, that, not having sense enough to discover how much the glory and power of the king is augmented by the flourishing state of the country he governs, he not only preferred his personal influence to that of England, but risked, exposed, and lost a most important portion of his dominions by endeavoring to submit that mighty portion to a more immediate dependence on the royal will. Mystery, insincerity, and duplicity were the engines of his reign. They sometimes procured success to his purposes, oftener subjected him to grievous insults and mortifications, and never ob-

tained his object without forfeiting some share of his character, and exposing his dignity to affronts and reproach from his subjects, and his authority to contempt from foreign nations. He seemed to have derived from his relations the Stuarts, all their perseverance in crooked and ill-judged policy without profiting by their experience, or recollecting that *his* branch had owed the crown to the attempts made by the former princes at extending the prerogative beyond the bounds set to it by the constitution. Nor does a sovereign, imbued with such fatal ambition, ever want a Jeffries or a Mansfield, or such less ostensible tools as the Dysons and Jenkinson, who for present emolument are ready to gibbet themselves to immortal infamy by seconding the infatuation of their masters."

We have dwelt at greater length on the history of a period remarkable for nothing but "great littlenesses," as Jared Sparks justly describes it, than we should probably have done under the guidance of any historian but Walpole. He was one of those men, more common than generally supposed, who threw away the fame to which nature prompted, for the indulgences which over-pampered taste suggested. The view he has taken of the history of the twelve years through which we have followed him, embodies every lesson that we should wish to deduce from the survey:—

"Let it be observed, however, that, when I impute to the king and his mother little more than a formed design of reducing the usurped authority of the great lords, I am far from meaning that there were not deeper designs at bottom. Lord Mansfield was by principle a tyrant; Lord Holland was bred in a monarchic school, was cruel, revengeful, daring, and subtle. Grenville, though in principle a republican, was bold, proud, dictatorial, and so self-willed that he would have expected Liberty herself should be his first slave. The Bedford faction, except the duke himself, were void of honor,

honesty, and virtue; and the Scotch were whatever their masters wished them to be, and too envious of the English, and became too much provoked by them, not to lend all their mischievous abilities towards the ruin of a constitution, whose benefits the English had imparted to them, but did not like they should engross. All these individuals or factions, I do not doubt, accepted and fomented the disposition they found predominant in the cabinet, as they had severally access to it; and the contradictions which the king suffered in his ill-advised measures, riveted in him a thirst of delivering himself from control, and to be above control he must be absolute. Thus on the innate desire of unbounded power in all princes, was engrafted a hate to the freedom of the subject, and therefore, whether the king set out with a plan of extending his prerogative, or adopted it, his subsequent measures, as often as he had an opportunity of directing them himself, tended to the sole object of acting by his own will. Frequent convulsions did that pursuit occasion, and heavy mortifications to himself. On the nation it heaped disgrace, and brought it to the brink of ruin; and should the event be consonant with the king's wishes of establishing the royal authority at home, it is more sure that the country will be so lowered, that the sovereign will become as subject to the mandates of France, as any little potentate in Europe."

In noticing the preceding volumes, we bore testimony to the skill and care which Sir Denis le Marchant has bestowed on the editing of the work; we must do more than renew this testimony, and declare that we should gladly see an original work on the early history of George III. from one who obviously has excellent sources of information at his command, with the ability to discriminate testimony, and the honesty of purpose necessary to elicit truth.

From the Edinburgh Philosophical Journal.

On the Luminousness of the Earth. By BARON VON HUMBOLDT.

If the luminous phenomenon which we ascribe to a galvanic current, *i. e.*, a movement of electricity in a circuit returning into itself, be designated by the indefinite name of the Northern light, or the Polar light, nothing more is thereby implied than the local direction in which the beginning of a certain luminous phenomenon is most generally, but by no means invariably, seen. What gives this phenomenon its greatest importance, is the fact which it reveals, *viz.*, that *the earth is luminous*; that our planet, besides the light which it receives from the central body, the sun, shows itself capable of a proper luminous act or process. The intensity of the earth-light, or rather the degree of luminosity which it diffuses, exceeds by a little, in the case of the brightest colored rays that shoot up to the zenith, the light of the moon in her first quarter. Occasionally, as on the 7th of January 1831, a printed page can be read without straining the sight. This light-process of earth, which the Polar regions exhibit almost incessantly, leads us by analogy to the remarkable phenomenon which the planet Venus presents. The portion of this planet which is not illuminated by the sun, glows occasionally with a proper phosphorescent gleam. It is not improbable that the moon, Jupiter, and comets, besides the reflected sun-light recognizable by the polariscope, also emit light pro-

duced by themselves. Without insisting on the problematical, but very common phenomenon of *sheet-lightning*, in which the whole of a deep massy cloud is flickeringly illuminated for several minutes at a time, we find other examples of terrestrial evolutions of light. To this head belong the celebrated *dry-fogs* of 1783 and 1831, which were luminous by night; the steady luminousness of large clouds, perfectly free from all flickering, observed by Rozier and Beccaria; and even the pale diffused light, as Arago has well observed, which serves to guide us in the open air, in thickly clouded autumn and wintry nights, when there is neither moon nor star in the firmament, nor snow upon the ground. As in the phenomenon of the Polar light occurring in high northern latitudes, in other words, in electro-magnetic storms, floods of flickering, and often party-colored light stream through the air; so in the hotter zones of the earth, between the tropics, are there many thousand square miles of ocean which are similarly light-engendering. Here, however, the magic of the light belongs to the organic forces of nature. Light-foaming flashes the bursting wave, the wide level glows with lustrous sparks, and every spark is the vital motion of an invisible animal world. So manifold is the source of terrestrial light. And shall we conceive it latent, not yet set free in vapors, as a means of explaining Moser's *pictures*—a discovery in which reality still presents itself to us as a vision shrouded in mystery?—*Kosmos*, s. 206, and *Cosmos*, English edition, p. 209.

From the Edinburgh Philosophical Journal.

On "*Gutta Percha*," a peculiar variety of *Caoutchouc*. By DOUGLAS MACLAGAN, M.D., F.R.S.E., &c. Communicated by the Royal Scottish Society of Art.*

Gutta Percha is the Malayan name for a substance which is the concrete juice of a large forest tree, native of the shores of the Straits of Malacca, Borneo, and the adjacent countries. The tree yielding it is unknown botanically, all the information we possess regarding it being, that it is a large forest tree, and yields this product abundantly. We are indebted for our knowledge of it to Dr. W. Montgomerie, H.E.I.C.S., whose spirited exertions to improve the cultivation of various articles of colonial produce at Singapore have obtained from him several distinguished marks of approbation from the Royal Society of Arts of London. For this communication regarding *gutta percha*, Dr. Montgomerie received a silver medal from the society.

This substance, in its crude state, differs, in many particulars, from common caoutchouc. It is of a pale-yellowish, or rather dirty-white, color. It is nearly as hard as wood, though it readily receives the impression of the nail. It is very tenacious, and not at all elastic.

It seemed to me to be worth while to determine, whether or not this substance really was a variety of caoutchouc, and for this purpose I subjected it to the ordinary process of ultimate analysis, and obtained as its per-centage composition, carbon, 86.36; hydrogen, 12.15; the remainder, 1.49, was most probably oxygen absorbed from the air during the process employed for purifying it, as the substance, whilst heating on the vapor-bath, acquired a brown color. The only analysis of common caoutchouc with which I am acquainted is that of Faraday, who obtained, carbon, 87.2; hydrogen, 12.8. The results are sufficiently near to warrant the conclusion, that the two matters in question are generically the same.

I found, also, that the *gutta percha* yields the same product of destructive distillation as the common caoutchouc. Without entering into details, I may briefly state, that both equally yield a clear, yellow, limpid oil, having no fixed boiling-point, and, therefore, being a mixture of different oleaginous principles. In both instances, the distillation proceeds most freely at temperatures between 360° and 390° Fahr., and seems almost stationary at 385°. Comparative analysis of similar portions of the two oils were made, and, as is already known of common caoutchouc, the products exhibit a constitution represented by the formula $C^{10}H^2$. The *gutta percha* thus appears really to be a modification of caoutchouc.

In its general properties it likewise shows a similarity to common caoutchouc. It is soluble in coal naphtha, in caoutchouc oil, and in ether. It is insoluble in alcohol and in water, and floats upon the latter.

Its most remarkable and distinctive peculiarity is the effect of heat upon it. When placed in water at 110°, no effect is produced upon it, except that it receives the impression of the nail more readily; but when the temperature is raised to 145° or upwards, it gradually becomes so soft and pliant as to be capable of being moulded into any form, or

of being rolled out into long pieces or flat plates. When in the soft state, it possesses all the elasticity of common Indian-rubber, but it does not retain these properties long. It soon begins again to grow hard, and a short time, varying according to the temperature and the size of the piece operated on, regains all its original hardness and rigidity. A ball one inch in diameter was completely softened by boiling water in ten minutes, and regained its hardness completely in less than half an hour. It appears to be capable of undergoing this alternate softening and hardening any number of times without change of property.

It is also to a certain extent ductile. When soft it is easily torn across, but when hard it is very tenacious. A piece not an eighth of an inch in thickness, when cold, easily raised a weight of forty-two pounds, and only broke when half a hundred weight was attached to it.

From these properties, it seems capable of many applications in the arts. Its solution appears to be as well adapted as that of common caoutchouc for making waterproof cloth, and, whilst softened, it can be made into solid articles, such as knife-handles, door-handles, &c. The Malays employ it for the former of these, and prefer it to wood. A surgeon, furnished with a small piece, could easily, with the aid of a little hot water, supply himself with bougies or pessaries of any size or form.

[Dr. M. exhibited a knife-handle, a walking-cane head, a riding-whip, and other articles, made of *gutta percha*.]

THE EXILED LONDONER.

I ROAM beneath a foreign sky,
That sky is cloudless, warm and clear;
And everything is glad but I;
But ah! my heart is far from here.

They bid me look on forests green,
And boundless prairies stretching far;
But I rejoice not in their sheen,
And longing turn to Temple Bar.

They bid me list the torrent's roar,
In all its foaming, bounding pride;
But I, I only think the more
On living torrents in Cheapside!

They bid me mark the mighty stream,
Which Mississippi rolls to sea;
But then I sink in pensive dream,
And turn my thoughts, dear Thames, to thee.

They bid me note the mountains high,
Whose snow-capp'd peaks my prospect end:
I only heave a secret sigh—
To Ludgate Hill my wishes tend.

They taunt me with our denser air,
And fogs so thick you scarce can see;
Then yellow fog, I will declare,
Though strange to say, I long for thee.

And everything in this bright clime
But serves to turn my thoughts to thee?
Thou London, of an earlier time,
O when shall I return to thee?

Punch.

* Read before the society 23d June, 1845.

From Tait's Magazine.

ON THE TEMPERANCE MOVEMENT OF MODERN TIMES.

BY THE ENGLISH OPIUM-EATER.

THE most remarkable instance of a combined movement in society, which history, perhaps, will be summoned to notice, is that which, in our own days, has applied itself to the abatement of intemperance. Naturally, or by any *direct* process, the machinery set in motion would seem irrelevant to the object: if one hundred men unite to elevate the standard of temperance, they can do this with effect only by improvements in their own separate cases: each individual, for such an effort of self-conquest, can draw upon no resources but his own. One member, in a combination of one hundred, when running a race, can hope for no coöperation from his ninety-nine associates. And yet, by a secondary action, such combinations are found eminently successful. Having obtained from every confederate a pledge, in some shape or other, that he will give them his support, thenceforwards they bring the passions of shame and self-esteem to bear upon each member's personal perseverance. Not only they keep alive and continually refresh in his thoughts the general purpose, which else might fade; but they also point the action of public contempt and of self-contempt at any defaulter much more potently, and with more acknowledged right to do so, when they use this influence under a license, volunteered, and signed, and sealed, by the man's own hand. They first conciliate his countenance through his intellectual perceptions of what is right; and next they sustain it through his conscience, (the strongest of his internal forces,) and even through the weakest of his human sensibilities. That revolution, therefore, which no combination of men can further by abating the original impulse of temptations, they often accomplish happily by maturing the secondary energies of resistance.

Already in their earliest stage, these temperance movements had obtained, both at home and abroad, a *national* range of grandeur. More than ten years ago, when M. de Tocqueville was resident in the United States, the principal American society counted two hundred and seventy thousand members: and in one single state, (Pennsylvania,) the annual diminution in the use of spirits had very soon reached half a million of gallons. Now a machinery must be so far good which accomplishes its end: the means are meritorious for so much as they effect. Even to strengthen a feeble resolution by the aid of other infirmities, such as shame or the very servility and cowardice of deference to public opinion, becomes prudent and laudable in the service of so great a cause. Nay, sometimes to make public profession of self-distrust by assuming the coercion of public pledges, may become an expression of frank courage, or even of noble principle, not fearing the shame of confession when it can aid the powers of victorious resistance. Yet still, so far as it is possible, every man sighs for a still higher victory over himself: a victory not tainted by bribes, and won from no impulses but those inspired by his own higher nature, and his own mysterious force of will; powers that in no man were ever fully developed.

This being so, it is well that from time to time every man should throw out any hints that have occurred to his experience—suggesting such as

may be new, renewing such as may be old, towards the encouragement of the information of persons engaged in so great a struggle. My own experience had never travelled in that course which could much instruct me in the miseries from wine, or in the resources for struggling with it. I had repeatedly been obliged, indeed, to lay it aside altogether; but in this I never found room for more than seven or ten days' struggle: excesses I had never practised in the use of wine; simply the habit of using it, and the collateral habits formed by excessive use of opium, had produced any difficulty at all in resigning it even on an hour's notice. From opium I derive my right of offering hints at all upon the subjects of abstinence in other forms. But the modes of suffering from the evil, and the separate modes of suffering from the effort of self-conquest, together with the errors of judgment incident to such states of transitional torment, are all nearly allied, practically analogous as regards the remedies, even if characteristically distinguished to the inner consciousness. I make no scruple, therefore, of speaking as from a station of high experience and of most watchful attention, which never remitted even under sufferings that were at times absolutely frantic.

I. The first hint is one that has been often offered; viz., the diminution of the particular liquor used, by the introduction into each glass of some inert substance, ascertained in bulk, and equally increasing in amount from day to day. But this plan has often been intercepted by an accident: shot, or sometimes bullets, were the substances nearest at hand; and an objection arose from too scrupulous a caution of chemistry as to the action upon lead of the vineous acid. Yet all objection of this kind might be removed at once, by using beads in a case where small decrements were wanted, and marbles, if it were thought advisable to use larger. Once for all, however, in cases deeply rooted, no advances ought ever to be made but by small stages: for the effect, which is insensible at first, by the tenth, twelfth, or fifteenth day, generally accumulates unendurably under any bolder deductions. I must not stop to illustrate this point; but certain it is, that by an error of this nature at the outset, most natural to human impatience under exquisite suffering, too generally the trial is abruptly brought to an end through the crisis of a passionate relapse.

II. Another object, and one to which the gladiator matched in single duel with intemperance, must direct a religious vigilance, is the *digestibility* of his food: it must be digestible not only by its original qualities, but also by its culinary preparation. In this last point we are all of us Manichæans: all of us yield a cordial assent to that Manichæan proverb which refers the meats and the cooks of this world to two opposite fountains of light and of darkness. Oromasdes it is, or the good principle, that sends the food; Ahrimanes, or the evil principle, that everywhere sends the cooks. Man has been repeatedly described or even defined, as by differential privilege of his nature, "a cooking animal." Brutes, it is said, have faces—man only has a countenance; brutes are as well able to eat as man—man only is able to cook what he eats. Such are the romances of self-flattery. I, on the contrary, maintain, that six thousand years have not availed, in this point, to raise our race generally to the level of ingenious savages. The natives of the Society and the Friendly Isles, or of New Zealand, and other fa-

vored spots, had, and still have an *art* of cookery, though very limited in its range: the French* have an art and more extensive; but we English are about upon a level (as regards this science) with the ape, to whom an instinct whispers that chestnuts may be roasted; or with the aboriginal Chinese of Charles Lamb's story, to whom the experience of many centuries had revealed thus much, viz., that a dish very much beyond the raw flesh of their ancestors, might be had by burning down the family mansion, and thus roasting the pig-stye. Rudest of barbarous devices is English cookery, and not much in advance of this primitive Chinese step; a fact which it would not be worth while to lament, were it not for the sake of the poor trembling deserter from the banners of intoxication, who is thus, and by no other cause, so often thrown back beneath the yoke which he had abjured. Past counting are the victims of alcohol, that, having by vast efforts emancipated themselves for a season, are violently forced into relapsing by the nervous irritations of demoniac cookery. Unhappily for *them*, the horrors of indigestion are relieved for the moment, however ultimately strengthened, by strong liquors; the relief is immediate and cannot fail to be perceived; but the aggravation, being removed to a distance, is not always referred to its proper cause. This is the capital rock and stumbling-block in the path of him who is hurrying back to the camps of temperance; and many a reader is likely to misapprehend the case through the habit he has acquired of supposing indigestion to lurk chiefly amongst *luxurious* dishes. But, on the contrary, it is amongst the plainest, simplest, and commonest dishes that such misery lurks, in England. Let us glance at three articles of diet, beyond all comparison of most ordinary occurrence, viz., potatoes, bread, and butchers' meat. The art of preparing potatoes for *human* use is utterly unknown except in certain provinces of our empire, and amongst certain sections of the laboring class. In our great cities—London, Edinburgh, &c.—the sort of things which you see offered at table under the name and reputation of potatoes, are such that, if you could suppose the company to be composed of Centaurs and Lapithæ, or any other quarrelsome people, it would become necessary for the police to interfere. The potato of cities is a very dangerous missile; and, if thrown with an accurate aim by an angry hand, will fracture any known skull. In volume and consistency, it is very like a paving-stone; only that, I should say, the paving-stone had the advantage in point of tenderness. And upon this horrid basis, which youthful ostriches would repent of swallowing, the trembling, palpitating invalid, fresh from the scourging of alcohol, is requested to build the superstructure of his dinner. The proverb says, that three flittings are as bad as a fire; and on that model I conceive that three potatoes, as they are found at many British dinner-tables, would be equal, in principle of ruin, to two glasses of vitriol. The same savage ignorance appears, and only not so often, in the bread of this island. Myriads of families eat it in that early stage of sponge which bread assumes during the process of baking; but less than sixty hours will not fit this dangerous article of human diet to be eaten. And those who are acquainted with the works of Parmentier, or other learned investigators

of bread and of the baker's art, must be aware that this quality of sponginess, (though quite equal to the ruin of the digestive organs,) is but one in a legion of vices to which the article is liable. A German of much research wrote a book on the conceivable faults in a pair of shoes, which he found to be about six hundred and sixty-six, many of them, as he observed, requiring a very delicate process of study to find out; whereas the possible faults in bread, which are not less in number, require no study at all for the detection: they publish themselves through all varieties of misery. But the perfection of barbarism, as regards our island cookery, is reserved for animal food; and the two poles of Oromasdes and Ahrimanes are nowhere so conspicuously exhibited. Our insular sheep, for instance, are so far superior to any which the continent produces, that the present Prussian minister at our court is in the habit of questioning a man's right to talk of mutton as anything beyond a great idea, unless he can prove a residence in Great Britain. One sole case he cites of a dinner on the Elbe, when a particular leg of mutton really struck him as rivaling any which he had known in England. The mystery seemed inexplicable; but, upon inquiry, it turned out to be an importation from Leith. Yet this incomparable article, to produce which the skill of the feeder must coöperate with the peculiar bounty of nature, calls forth the most dangerous refinements of barbarism in its cookery. A Frenchman requires, as the primary qualification of flesh meat, that it should be tender. We English universally, but especially the Scots, treat that quality with indifference, or with bare toleration. What we require is, that it should be fresh, that is, recently killed, (in which state it cannot be digestible except by a crocodile;) and we present it at table in a transition state of leather, demanding the teeth of a tiger to rend it in pieces, and the stomach of a tiger to digest it.

With these habits amongst our countrymen, exemplified daily in the articles of widest use, it is evident that the sufferer from intemperance has a harder quarantine, in this island, to support during the effort of restoration, than he could have anywhere else in Christendom. In Persia, and, perhaps, there only on this terraqueous planet, matters might be even worse; for, whilst we English neglect the machinery of digestion, as a matter entitled to little consideration, the people of Teheran seem unaware that there is any such machinery. So, at least, one might presume, from cases on record, and especially from the reckless folly, under severe illness, from indigestion, of the three Persian princes, who visited this country, as stated by their official *mehmander*, Mr. Fraser. With us, the excess of ignorance, upon this subject, betrays itself oftenest in that vain-glorious answer made by people, who at any time are admonished of the sufferings which they are preparing for themselves by these outrages upon the most delicate of human organs. They, for *their* parts, "know not if they have a stomach; they know not what it is that dyspepsy means;" forgetting that, in thus vaunting their *strength* of stomach, they are, at the same time, proclaiming its coarseness; and showing themselves unaware that precisely those, whom such coarseness of organization relieves from immediate and seasonable reaction of suffering, are the favorite subjects of that heavier reaction which takes the shape of *delirium tremens*, of palsy, and of lunacy. It

* But judge not, reader, of French skill by the attempts of fourth-rate artists; and understand me to speak with respect of this skill, not as it is the tool of luxury, but as it is the handmaid of health.

is but a fanciful advantage which *they* enjoy, for whom the immediate impunity avails only to hide the final horrors which are gathering upon them from the gloomy rear. Better, by far, that more of immediate discomfort had guaranteed to them less of reversionary anguish. It may be safely asserted, that few, indeed, are the suicides amongst us to which the miseries of indigestion have not been a large concurring cause; and even where nothing so dreadful as *that* occurs, always these miseries are the chief hindrance of the self-reforming drunkard, and the commonest cause of his relapse. It is certain, also, that misanthropic gloom and bad temper besiege that class, by preference, to whom peculiar coarseness or obtuse sensibility of organization has denied the salutary warnings and early prelibations of punishment which, happily for most men, besiege the more direct and obvious frailties of the digestive apparatus.

The whole process and elaborate machinery of digestion are felt to be mean and humiliating when viewed in relation to our mere animal economy. But they rise into dignity, and assert their own supreme importance, when they are studied from another station, viz., in relation to the intellect and temper; no man dares, *then*, to despise them; it is then seen that these functions of the human system form the essential basis upon which the strength and health of our higher nature repose; and that upon these functions, chiefly, the genial happiness of life is dependant. All the rules of prudence, or gifts of experience that life can accumulate, will never do as much for human comfort and welfare as would be done by a stricter attention, and a wiser science, directed to the digestive system; in this attention lies the key to any perfect restoration for the victim of intemperance; and, considering the peculiar hostility to the digestive health which exists in the dietetic habits of our own country, it may be feared that nowhere upon earth has the reclaimed martyr to intemperance so difficult a combat to sustain; nowhere, therefore, is it so important to direct the attention upon an *artificial* culture of those resources which naturally, and by the established habits of the land, are surest to be neglected. The sheet anchor for the storm-beaten sufferer, who is laboring to recover a haven of rest from the agonies of intemperance, and who has had the fortitude to abjure the poison which ruined, but which also, for brief intervals, offered him his only consolation, lies, beyond all doubt, in a most anxious regard to everything connected with this supreme function of our animal economy. And, as few men that are not regularly trained to medical studies can have the complex knowledge requisite for such a duty, some printed guide should be sought of a regular professional order. Twenty years ago, Dr. Wilson Philip published a valuable book of this class, which united a wide range of practical directions as to the choice of diet, and as to the qualities and tendencies of all esculent articles likely to be found at British tables, with some ingenious speculations upon the still mysterious theory of digestion. These were derived from experiments made upon rabbits, and had originally been communicated by him to the Royal Society of London, who judged them worthy of publication in their Transactions. I notice them chiefly for the sake of remarking, that the rationale of digestion, as here suggested, explains the reason of a fact, which merely *as* a fact had not been known

until modern times, viz., the injuriousness to enfeebled stomachs of all fluid. Fifty years ago—and still lingering inveterately amongst nurses and other ignorant persons—there prevailed a notion that “slops” must be the proper resource of the valetudinarian; and the same erroneous notion appears in the common expression of ignorant wonder at the sort of breakfasts usual amongst women of rank in the times of Queen Elizabeth. “What robust stomachs they must have had, to support such solid meals!” As to the question of fact, whether the stomachs were more or less robust in those days than at present, there is no need to offer an opinion. But the question of principle concerned in scientific dietetics points in the very opposite direction. By how much the organs of digestion are feebler, by so much is it the more indispensable that solid food and animal food should be adopted. A robust stomach may be equal to the trying task of supporting a fluid, such as tea for breakfast; but for a feeble stomach, and still more for a stomach *enfeebled* by bad habits, broiled beef, or something equally solid and animal, but not too much subjected to the action of fire, is the only tolerable diet. This, indeed, is the one capital rule for a sufferer from habitual intoxication, who must inevitably labor under an impaired digestion; that as little as possible he should use of any liquid diet, and as little as possible of vegetable diet. Beef and a little bread, (at the least sixty hours old,) compose the privileged bill of fare for his breakfast. But precisely it is, by the way, in relation to this earliest meal that human folly has in one or two instances shown itself most ruinously inventive. The less variety there is at that meal, the more is the danger from any single luxury: and there is one known by the name of “muffins,” which has repeatedly manifested itself to be a plain and direct bounty upon suicide. Darwin, in his “*Zoönomia*,” reports a case where an officer, holding the rank of lieutenant-colonel, could not tolerate a breakfast in which this odious article was wanting; but, as a savage retribution invariably supervened within an hour or two upon this act of insane sensuality, he came to a resolution that life was intolerable *with* muffins, but still more intolerable *without* muffins. He would stand the nuisance no longer; but yet, being a just man, he would give nature one final chance of reforming her dyspeptic atrocities. Muffins therefore being laid at one angle of the breakfast-table, and loaded pistols at another, with rigid equity the colonel awaited the result. This was naturally pretty much as usual: and then the poor man, incapable of retreating from his word of honor, committed suicide—having previously left a line for posterity to the effect, (though I forget the expression,) “that a muffinless world was no world for *him*; better no life at all than a life dismantled of muffins.”—Dr. Darwin was a showy philosopher, and fond of producing effect; so that some allowance must be made in construing the affair. Strictly speaking, it is probable that not the special want of muffins, but the general torment of indigestion, was the curse from which the unhappy sufferer sought relief by suicide. And the colonel was not the first by many a million, that has fled from the very same form of wretchedness, or from its effects upon the genial spirits, to the same gloomy refuge. It should never be forgotten that, although some other more overt vexation is generally assigned as the proximate cause of suicide, and often may be so as regards the

immediate occasion, too generally this vexation borrowed its whole power to annoy, from the habitual atmosphere of irritation in which the system had been kept by indigestion. So that indirectly and virtually perhaps all suicides may be traced to mismanaged digestion. Meantime, in alluding at all to so dreadful a subject as suicide, I do so only by way of giving deeper effect to the opinion expressed above, upon the chief cause of relapse into habits of intemperance amongst those who have once accomplished their deliverance. Errors of digestion, either from impaired powers or from powers not so much enfeebled as deranged, is the one immeasurable source both of disease and of secret wretchedness to the human race. Life is laid waste by the eternal fretting of the vital forces emanating from this one cause. And it may well be conceived, that if cases so endless even of suicide, in every generation, are virtually traceable to this main root, much more must it be able to shake and undermine the yet palpitating frame of the poor fugitive from intemperance; since indigestion in every mode and variety of its changes irresistibly upholds the temptation to that form of excitement which, though one foremost cause of indigestion, is yet unhappily its sole immediate palliation.

III. Next, after the most vigorous attention, and a scientific attention, to the digestive system, in power of operation, stands *exercise*. Here, however, most people have their own separate habits; with respect to the time of exercise, the duration, and the particular mode, on which a stranger cannot venture to intrude with his advice. Some will not endure the steady patience required for walking exercise; many benefit most by riding on horseback; and in days when roads were more rugged and the springs of carriages less improved, I have known people who found most advantage in the vibrations communicated to the frame by a heavy rumbling carriage. For myself, under the ravages of opium, I have found walking the most beneficial exercise, besides that it requires no previous notice or preparation of any kind; and this is a capital advantage in a state of drooping energies, or of impatient and unresting agitation. I may mention, as possibly an accident of my individual temperament, but possibly also no accident at all, that the relief obtained by walking was always most sensibly brought home to my consciousness, when some part of it (at the least a mile and a half) has been performed before breakfast. In this there soon ceased to be any difficulty; for whilst under the full oppression of opium, it was impossible for me to rise at any hour that could, by the most indulgent courtesy, be described as within the pale of morning, no sooner had there been established any considerable relief from this oppression than the tendency was in the opposite direction; the difficulty became continually greater of sleeping, even to a reasonable hour. Having once accomplished the feat of waking at 9 A. M., I backed in a space of seven or eight months to eight o'clock, to seven, to six, five, four, three; until at this point a metaphysical fear fell upon me that I was actually backing into "yesterday," and should soon have no sleep at all. Below three, however, I did not descend; and for a couple of years three and half hours' sleep was all that I could obtain in the twenty-four hours. From this no particular suffering arose, except the nervous impatience of lying in bed for one moment after awaking. Consequently the habit of walking before breakfast

became at length troublesome no longer as a most odious duty, but on the contrary, as a temptation that could hardly be resisted on the wettest mornings. As to the quantity of the exercise, I found that six miles a day formed the *minimum* which would support permanently a particular standard of animal spirits evidenced to myself by certain apparent symptoms. I averaged about nine and a half miles a day; but ascended on particular days to fifteen or sixteen, and more rarely to twenty-three or twenty-four; a quantity which did not produce fatigue; on the contrary, it spread a sense of improvement through almost the whole week that followed; but usually in the night immediately succeeding to such an exertion, I lost much of my sleep; a privation that, under the circumstances explained, deterred me from trying the experiment too often. For one or two years, I accomplished more than I have here claimed, viz., from six to seven thousand miles in the twelve months. Let me add to this slight abstract of my own experience, in a point where it is really difficult to offer any useful advice (the tastes and habits of men varying so much in this chapter of exercise) that one caution seems applicable to the case of all persons suffering from nervous irritability, viz., that a secluded space should be measured off accurately in some private grounds not liable to the interruption or notice of chance intruders; for these annoyances are unendurable to the restless invalid; to be questioned upon trivial things is death to him; and the perpetual anticipation of such annoyances is little less distressing. Some plan must also be adopted for registering the number of rounds performed. I once walked for eighteen months in a circuit so confined that forty revolutions were needed to complete a mile. These I counted at one time by a rosary of beads; every tenth round being marked by drawing a blue bead, the other nine by drawing white beads. But this plan I found in practice more troublesome and inaccurate than that of using ten detached counters, stones or anything else that was large enough and solid. These were applied to the separate bars of a garden chair; the first bar indicating of itself the first decade, the second bar the second decade, and so on. In fact I used the chair in some measure as a Roman *abacus*, but on a still simpler plan; and as the chair offered sixteen bars, it followed that, on covering the last bar of the series with the ten markers, I perceived without any trouble of calculation the accomplishment of my fourth mile.

A necessity more painful to me by far than that of taking continual exercise, arose out of a cause which applies perhaps with the same intensity only to opium cases, but must also apply in some degree to all cases of debilitation from morbid stimulation of the nerves, whether by means of wine or opium, or distilled liquors. In travelling on the outside of mails during my youthful days, for I could not endure the inside, occasionally during the night time I suffered naturally from cold; no cloaks, &c., were always sufficient to relieve this; and I then made the discovery that opium after an hour or so diffuses a warmth deeper and far more permanent than could be had from any other known source. I mention this to explain in some measure the awful passion of cold which for some years haunted the inverse process of laying aside the opium. It was a perfect frenzy of misery; cold was a sensation which then first, as a mode of torment, seemed to have been revealed. In the

months of July and August, and not at all the less during the very middle watch of the day, I sat in the closest proximity to a blazing fire; cloaks, blankets, counterpanes, hearth-rugs, horse-cloths, were piled upon my shoulders, but with hardly a glimmering of relief. At night, and after taking coffee, I felt a little warmer, and could sometimes afford to smile at the resemblance of my own case to that of Harry Gill.* But secretly I was struck with awe at the revelation of powers so unsearchably new lurking within old affections so familiarly known as cold. Upon the analogy of this case, it might be thought that nothing whatever had yet been truly and seriously felt by man; nothing searched or probed by human sensibilities to a depth below the surface. If cold could give out mysteries of suffering so novel, all things in the world might be yet unvisited by the truth of human sensations. All experience worthy of the name was yet to begin. Meantime the external phenomenon, by which the cold expressed itself, was a sense (but with little reality) of eternal freezing perspiration. From this I was never free; and at length, from finding one general ablution sufficient for one day, I was thrown upon the irritating necessity of repeating it more frequently than would seem credible, if stated. At this time I used always hot water; and a thought occurred to me very seriously that it would be best to live constantly, and perhaps to sleep in a bath. What caused me to renounce this plan, was an accident that compelled me for one day to use cold water. This first of all communicated any lasting warmth; so that ever afterwards I used none but cold water. Now, to live in a cold bath in our climate, and in my own state of preternatural sensibility to cold, was not an idea to dally with. I wish to mention, however, for the information of other sufferers in the same way, one change in the mode of applying the water which led to a considerable and a sudden improvement in the condition of my feelings. I had endeavored to procure a child's battledore, as an easy means (when clothed with sponge,) of reaching the interspace between the shoulders; which interspace by the way is a sort of Bokhara, so provokingly situated, that it will neither suffer itself to be reached from the north, in which direction even the Czar with his long arms has only singed his own fingers, and lost six thousand camels; nor at all better from the south, upon which line of approach the greatest potentate in Southern Asia, viz., No. —, in Leaden-hall street, has found it the best policy to pocket the little Khan's murderous defiance and persevering insults. There is no battledore long enough to reach him either way. In my own difficulty, I felt almost as perplexed as the Honorable East India Company, when I found that no battledore was to be had; for no town was near at hand. In default

of a battledore, therefore, my necessity threw my experiment upon a long hair-brush; and this eventually proved of much greater service than any sponge or any battledore. For the friction of the brush caused an irritation on the surface of the skin, which more than anything else has gradually diminished the once continual misery of unrelenting frost; although even yet it renews itself most distressingly at uncertain intervals.

IV. I counsel the patient not to make the mistake of supposing that his amendment will necessarily proceed continuously, or by equal increments: because this, which is a common notion, will certainly lead to dangerous disappointments. How frequently have I heard people encouraging a self-reformer by such language as this:—"When you have got over the fourth day of abstinence, which suppose to be Sunday, then Monday will find you a trifle better; Tuesday better still—though still it should be only by a trifle; and so on. You may, at least, rely on never going back: you may assure yourself of having seen the worst; and the positive improvements, if trifles separately, must soon gather into a sensible magnitude." This may be true in a case of short standing; but, as a general rule, it is perilously delusive. On the contrary, the line of progress, if exhibited in a geometrical construction, would describe an ascending path upon the whole, but with frequent retrocessions into descending curves, which, compared with the point of ascent that had been previously gained and so vexatiously interrupted, would sometimes seem deeper than the original point of starting. This mortifying tendency I can report from experiences many times repeated with regard to opium; and so unaccountably as regarded all the previous grounds, of expectation, that I am compelled to suppose it a tendency inherent in the very nature of all self-restorations for animal systems. They move perhaps necessarily *per saltum*, by intermitting spasms, and pulsations of unequal energy.

V. I counsel the patient frequently to call back before his thoughts—when suffering sorrowful collapses, that seem unmerited by anything done or neglected—that such, and far worse, perhaps, must have been his experience, and with no reversion of hope behind, had he persisted in his intemperate indulgences: these also suffer their own collapses, and (so far as things not co-present can be compared) by many degrees more shocking to the genial instincts.

VI. I exhort him to believe, that no movement on his own part, not the smallest conceivable, towards the restoration of his healthy state, can by possibility perish. Nothing in this direction is finally lost; but often it disappears and hides itself; suddenly, however, to reappear, and in unexpected strength; and much more hopefully; because such minute elements of improvement, by reappearing at a remoter stage, show themselves to have combined with other elements of the same kind; so that equally by their gathering tendency and their duration through intervals of apparent darkness, and below the current of what seemed absolute interruption, they argue themselves to be settled in the system. There is no good gift that does not come from God: almost his greatest is health, with the peace which it inherits; and man must reap *this* on the same terms as he was told to reap God's earliest gift, the fruits of the earth; viz., "in the sweat of his brow," through labor, often through sorrow, through disappointment,

*"Harry Gill:"—Many readers, in this generation, may not be aware of this ballad as one amongst the early poems of Wordsworth. Thirty or forty years ago, it was the object of some insipid ridicule, which ought, perhaps, in another place, to be noticed. And, doubtless, this ridicule was heightened by the false impression that the story had been some old woman's superstitious fiction, meant to illustrate a supernatural judgment on hard-heartedness. But the story was a physiologic fact; and, originally, it had been brought forward in a philosophic work, by Darwin, who had the reputation of an irreligious man, and even of an infidel. A bold free-thinker he certainly was; a deist; and, by public repute, something more.

but still through imperishable perseverance, and hoping under clouds, when all hope seems darkened.

VII. It is difficult, in selecting from many memoranda of warning or encouragement, to know which to prefer when the space disposable is limited. But it seems to me important not to omit this particular caution: The patient will be naturally anxious, as he goes on, frequently to test the amount of his advance, and its rate, if that were possible. But this he will see no mode of doing, except through tentative balancings of his feelings, and generally of the moral atmosphere around him, as to pleasure and hope, against the corresponding states, so far as he can recall them from his periods of intemperance. But these comparisons, I warn him, are fallacious, when made in this way: the two states are incommensurable on any plan of *direct* comparison. Some common measure must be found, and, *out of himself*; some positive fact, that will not bend to his own delusive feeling at the moment: as, for instance, in what degree he finds tolerable what heretofore was *not so*—the effort of writing letters, or transacting business, or undertaking a journey, or overtaking the arrears of labor, that had been once thrown off to a distance. If in these things he finds himself improved by tests that cannot be disputed, he may safely disregard any skeptical whispers from a wayward sensibility which cannot yet, perhaps, have recovered its normal health, however much improved. His inner feelings may not yet point steadily to the truth, though they may vibrate in that direction. Besides, it is certain that sometimes very manifest advances, such as any medical man would perceive at a glance, carry a man through stages of agitation and discomfort. A far worse condition might happen to be less agitated, and so far more bearable. Now, when a man is positively suffering discomfort, when he is below the line of pleasurable feeling, he is no proper judge of his own condition, which he neither will nor can appreciate. Toothache extorts more groans than drowsy.

VIII. Another important caution is, not to confound with the effects of intemperance any other natural effects of debility from advanced years. Many a man, having begun to be intemperate at thirty, enters at sixty or upwards upon a career of self-restoration. And by self-restoration he understands the renewal of that state in which he was when first swerving from temperance. But that state for his memory is coincident with his state of youth. The two states are coadunated. In his recollections they are intertwined too closely. But life, without any intemperance at all, would soon have untwisted them. Charles Lamb, for instance, at forty-five, and Coleridge at sixty, measured their several conditions by such tests as the loss of all disposition to involuntary murmuring of musical airs or fragments when rising from bed. Once they had sung when rising in the morning light; now they sang no more. The *vocal* utterance of joy for them was silenced forever. But these are amongst the changes that life, stern power, inflicts at any rate; these would have happened, and above all to men worn by the unequal irritations of too much thinking, and by those modes of care

That kill the bloom before its time,
And blanch without the owner's crime
The most resplendent hair,

not at all the less, had the one drunk no brandy, nor the other any laudanum. A man must submit to the conditions of humanity, and not quarrel with a cure as incomplete, because in his climacteric year of 63, he cannot recover, entirely, the vivacities of 35. If, by dipping seven times in Jordan, he had cleansed his whole leprosy of intemperance; if, by going down into Bethesda, he were able to mount again upon the pinions of his youth—even then he might querulously say—"But, after all these marvels in my favor, I suppose that one of these fine mornings I, like other people, shall have to bespeak a coffin." Why, yes, undoubtedly he will, or somebody for him. But privileges so special were not promised, even by the mysterious waters of Palestine. Die he must. And counsels tendered to the intemperate do not hope to accomplish what might have been beyond the baths of Jordan or Bethesda. They do enough, if, being executed by efforts in the spirit of earnest sincerity, they make a life of *growing* misery moderately happy for the patient; and, through that great change, perhaps more than moderately useful for others.

IX. One final remark I will make:—pointed to the case, not of the yet struggling patient, but of him who is fully reestablished; and the more so, because I (who am no hypocrite, but rather frank to an infirmity) acknowledge, in myself, the trembling tendency at intervals, which would, if permitted, sweep round into currents that might be hard to overrule. After the absolute restoration to health, a man is very apt to say—Now, then, how shall I use my health? To what delightful purpose shall I apply it? Surely it is idle to carry a fine jewel in one's watch pocket, and never to astonish the weak minds of this world, by wearing it and flashing it in their eyes. "But how?" retorts his philosophic friend: "my good fellow, are you not using it at this moment? Breathing, for instance, talking to me, (though rather absurdly,) and airing your legs, at a glowing fire?" "Why, yes," the other confesses; "that is all true: but I am dull; and, if you will pardon my rudeness, even in spite of your too philosophic presence. It is painful to say so; but, sincerely, if I had the power, at this moment, to turn you, by magic, into a bottle of old port wine, so corrupt is my nature, that really I fear lest the exchange might, for the moment, strike me as agreeable." Such a mood, I apprehend, is apt to revolve upon many of us, at intervals, however firmly married to temperance. And the propensity to it has a root in certain analogies running through our nature. If the reader will permit me, for a moment, the use of what, without such an apology, might seem pedantic, I would call it the instinct of *focalizing*, which prompts such random desires. Feeling is diffused over the whole surface of the body; but light is focalized in the eye; sound in the ear. The organization of a sense or a pleasure seems diluted and imperfect, unless it is gathered by some machinery into one focus, or local centre. And thus it is that a general state of pleasurable feeling sometimes seems too superficially diffused, and one has a craving to intensify or brighten it by concentration through some sufficient stimulant. I, for my part, have tried everything in this world except "*bang*," which, I believe, is obtained from hemp. There are other preparations of hemp, which have been found to give great relief from *ennu*; not ropes, but something lately introduced which acts upon the sys-

tem as the laughing gas, (nitrous oxide) acts at times. One farmer in Mid-Lothian was mentioned to me eight months ago, as having taken it, and ever since annoyed his neighbors by immoderate fits of laughter; so that in January it was agreed to present him to the sheriff as a nuisance. But for some reason the plan was laid aside; and now, eight months later, I hear that the farmer is laughing more rapturously than ever, continues in the happiest frame of mind, the kindest of creatures, and the general torment of his neighborhood. Now, I confess to having had a lurking interest in this extract of hemp, when first I heard of it: and at intervals a desire will continue to make itself felt for some deeper compression or centralization of the genial feelings than ordinary life affords. But old things will not avail, and new things I am now able to resist. Still, as the occasional craving does really arise in most men, it is well to notice it; and chiefly for the purpose of saying, that this dangerous feeling wears off by degrees; and oftentimes for long periods it intermits so entirely as to be even displaced by a profound disgust to all modes of artificial stimulation. At those times I have remarked that the pleasurable condition of health does *not* seem weakened by its want of centralization. It seems to form a thousand centres. This it is well to know; because there are many who would resist effectually, if they were aware of any natural change going on silently in favor of their own efforts, such as would finally ratify the success. Towards such a result they would gladly contribute by waiting and forbearing; whilst, under despondency as to this result, they might more easily yield to some chance temptation.

Finally, there is something to interest us in the time at which this temperance movement has begun to stir. Let me close with a slight notice of what chiefly impresses myself in the relation between this time and the other circumstances of the case. In reviewing history, we may see something more than mere convenience in distributing it into three chambers; ancient history, ending in the space between the Western Empire falling and Mahomet arising; modern history, from that time to this; and a new modern history arising at present, or from the French Revolution. Two great races of men, our own in a two-headed form—British and American, and secondly, the Russian, are those which, like rising deluges, already reveal their mission to overflow the earth. Both these races, partly through climate, or through derivation of blood, and partly through the contagion of habits inevitable to brothers of the same nation, are tainted carnally with the appetite for brandy, for slings, for juleps. And no fire racing through the forests of Nova Scotia for three hundred miles in the direction of some doomed city, ever moved so fiercely as the infection of habits amongst the dense and fiery populations of republican North America.

But it is remarkable, that the whole *ancient* system of civilization, all the miracles of Greece and Rome, Persia and Egypt, moved by the machinery of races that were *not* tainted with any such popular *marasmus*. The taste was slightly sowed, as an *artificial* taste, amongst luxurious individuals, but never ran through the laboring classes, through armies, through cities. The blood and the climate forbade it. In this earliest era of history, all the great races, consequently all the great empires, threw themselves, by accumulation, upon the genial climates of the south—having, in

fact, the magnificent lake of the Mediterranean for their general centre of evolution. Round this lake, in a zone of varying depth, towered the whole grandeurs of the Pagan earth. But, in such climates, man is naturally temperate. He is so by physical coercion, and for the necessities of rest and coolness. The Spaniard, the Moor, or the Arab, has no merit in his temperance. The effort, for *him*, would be to form the taste for alcohol. He has a vast fore-ground of disgust to traverse before he can reach a taste so remote and alien. No need for resistance in his will where nature resists on his behalf. Sherbet, shadoocks, grapes these were innocent applications to thirst. And the great republic of antiquity said to her legionary sons:—"Soldier, if you thirst, there is the river;—Nile, suppose, or Ebro. Better drink there cannot be. Of this you may take 'at discretion.' Or, if you wait till the *impedimenta* come up, you may draw your ration of *Posca*." What was *posca*? It was, in fact, acidulated water; three parts of superfine water to one part of the very best vinegar. Nothing stronger did Rome, that awful mother, allow to her dearest children, *i. e.* her legions. Truest of blessings, that veiling itself in seeming sternness, drove away the wicked phantoms that haunt the couches of yet greater nations. "The blessing of the evil geni," says an Eastern proverb, "these are curses." And the stern refusals of wisely loving mothers—these are the mightiest of gifts.

Now, on the other hand, our northern climates have universally the taste, latent if not developed, for powerful liquors. And through their blood, as also through the natural tendency of the imitative principle amongst compatriots, from these high latitudes the greatest of our modern nations propagate the contagion to their brothers, though colonizing warm climates. And it is remarkable that our modern preparations of liquors, even when harmless in their earliest stages, are fitted, like stepping-stones, for making the transition to higher stages that are *not* harmless. The weakest preparations from malt, lead, by graduated steps, to the strongest; until we arrive at the intoxicating porter of London, which, under its local name (so insidiously delusive) of "*beer*," diffuses the most extensive ravages.

Under these marked circumstances of difference between the ruling races of antiquity and of our modern times, it now happens that the greatest era by far of human expansion is opening upon us. Two vast movements are hurrying into action by velocities continually accelerated—the great revolutionary movement from political causes concurring with the great physical movement in locomotion and social intercourse, from the gigantic (though still infant) powers of steam. No such Titan resources for modifying each other were ever before dreamed of by nations: and the next hundred years will have changed the face of the world. At the opening of such a crisis, had no third movement arisen of resistance to intemperate habits, there would have been ground for despondency as to the amelioration of the human race. But, as the case stands, the new principle of resistance nationally to bad habits, has arisen almost concurrently with the new powers of national intercourse; and henceforward, by a change equally sudden and unlooked for, that new machinery, which would else most surely have multiplied the ruins of intoxication, has become the strongest agency for hastening its extirpation.

From Tait's Magazine.

NELSON'S ATTACK ON COPENHAGEN.

FROM THE LIFE AND CORRESPONDENCE OF NIEBUHR, THE HISTORIAN OF ROME.

AFTER a residence of a year and a half in Scotland, Niebuhr returned to Denmark, in the beginning of November, 1799. In May, 1800, he was appointed assessor at the Board of Trade for the East India department, and secretary and chief manager of the standing commission for the affairs of Barbary. In the same month, and before commencing the performance of his official duties, he was married to Amelia. In the autumn of the same year, he was offered a chair in the university of Kiel, which he declined in the mean time. His letters during the bombardment follow:—

To Madame Hensler.

Copenhagen, March 24, 1801.

You have probably learnt by the last post, the reports which are spread, of the approach of an English fleet towards us, which were brought by the captain of a vessel who had gone to the Sound, and also from the island of Anholt. We were not willing to write to you of the reports, although they were too likely to be true; and when they amounted to a certainty, it was then too late. On Sunday night, however, an express was despatched from Helsingor with intelligence that the fleet had been seen near Gillelye, about three miles north-west of this place. There are some roads there, where they had cast anchor; to-day people say that they have weighed anchor and crossed over.

On Saturday evening, their negotiators, Drummond and Vansittart, left us after a conference, in which a very unbecoming demand was refused until the embargo should be taken off. An English frigate had come hither the preceding evening, under a flag of truce, but set sail again the same Saturday evening. The flag shows that they consider themselves at war with us, since they feel that they are waging it against us. We have not, however, displayed the least act of hostility towards them; but it is probable that the hour of firing the first shot, and of irrevocable war, is very near. It seems more likely to me that blood will flow to-day or to-morrow, than that a delay should take place, as many suppose. The wind is now favorable for the attempt of the English to force a passage, in which they must succeed; and as the cannonade from Cronberg must be very audible here in the city, we are often listening for the sound of it.

Nelson's presence causes us, who expect from him the same energy he has displayed elsewhere, to think that our anchoring ground will be furiously attacked. Others give credit to a report that he is opposed to an expedition into the Baltic, and has said, that "he did not choose to ensnare himself in that mousetrap." People here are as anxious to hear as ready to spread news. An attack upon our line of defence, is, indeed, a fearful event for the city. I hope, however, that we shall support it. We should then earn fame, and awake the nation from its long slumber; undoubtedly with such a loss as we should feel for a length of time. That they should content themselves with blockading, when the war is certain, remaining satisfied with shutting us up, whilst we meanwhile were completing our preparations, is not at all probable. The next few weeks, therefore, will most likely decide our fate. I do not write a de-

tailed account of our preparations for defence, because no one can tell whether or not the conveyance of the mail may be exposed to danger. Thus much everybody is welcome to know, that yesterday, already as many as a thousand men were voluntarily enlisted in the service, the soldiers of which are, at other times, obtained by pressing.

It seems odd that I should have to write to you of war and military preparations, and things in general so strange to us. The approaching crisis makes it perhaps difficult, especially when one talks much about it, to draw off the thoughts from it; but it shall not so engross us as to prevent our speaking to you of that with which we had better be occupied, than with topics which excite only anxiety, bitterness, and hostile emotions. We try to guard against this, and occupy ourselves, as far as we can, as in the midst of peace. We are reading the *Odyssey* in the first translation. 'Melia had almost entirely lost it from her memory, since she read it when you were both girls in the house of your parents. She takes a hearty pleasure in Homer, so that she thinks nothing more charming; and you know how delightfully she shows her enjoyment. This recitation, therefore, gives me great gratification. Before that, we read the *Melanie* of Laharpe. It is a beautiful performance; nor can you lay it aside without emotion. I consider it a rare masterpiece, of great simplicity.

'Melia is perfectly composed; though the women here in general are in great distress. Schimmelmann is full of firmness and courage, although he is not blind to our danger. You must keep up your spirits concerning us, yet without being too secure, since a frightful misfortune might befall us. How and wherefore this is possible, he knows full well, and so do I; but I must write nothing on that head.

As long as our line of defence holds out, no shots, and probably no shells, can reach us in the West-street; thus much for your comfort.

Copenhagen, March 28, 1801.

We received your letter yesterday, and must answer you immediately, since it calls for it with that anxious voice to which there is no being silent. You shall have intelligence from me by every post, and of everything which I hear and may speak of. I have, this time, written in a letter attached to this and addressed to Moltke, all that relates to our military condition; do you read it. I write to-day to my father, and to Behrens; communicate the intelligence still to B. One can speak and write of nothing else; and yet it becomes tiresome to be always saying the same thing. As for 'Melia, it is not to be thought of that she should already be able to resume her part in our correspondence.

I wrote last time in some anxiety about our line of defence, an anxiety which I must now lessen. It was grounded upon the fear that the piles and planks which enclose the great island-battery, were only single, and might therefore be knocked down, which would cause the downfall of the whole battery. I have since learnt that this is not the case, but that they are so dove-tailed and rammed in, that we may be tolerably easy on that side. I have also learnt that the people are pretty well protected by a very strong breastwork on the bastion, and that a furnace for casting red-hot shot is raised there—a fact that I was not certain of before. I was afraid also that the channel between

the islands and the dockyard fortifications, was deeper than I find it is. On that ground truly I take more courage: courage, that is, as to the result; for we have, and must have courage to resist, if we would not disgrace ourselves, even if we should perish. Only may you in Holstein continue safe! Our individual lives are so in a tolerable degree; and composure on that head, which at other times would be downright insensibility, is in time of war indispensably necessary. Should we survive the danger, it may harden us more than ever to act somewhat like men.

Your opinion of our allies is, on the whole, very correct; I have never expected otherwise. Therefore it does not now depress me; and I thank Heaven for this foresight of the danger in its entire compass, (your state of defencelessness being excepted.) The king of Sweden has appeared in a very disadvantageous light in the conference with our respected Crown Prince. Sweden has promised us her ships, but not before the 2d of April. It was well known that this would be too late. The Schonen* side of the sound is unfortified, and therefore the closing of the sound is impracticable. We have also been hindered in our preparations by mistakes and accidents. Fearful as our situation is, good effects have already resulted from it.

We are awakened from sleep; experience has convinced us of much, to which advice and counsel could not make us attentive. No one shines more than Schimmelmann. Resigned to the loss of his great property in the colonies, willingly offering the remainder, resolved not to expose us to a still greater danger on the chances of a favorable issue, and for the mere parrying off of the danger which hangs over us, he surrenders himself to the suggestions of his heart, and thinks and speaks with a dignity and grace which rise from his soul and fortify it with peace and composure. Only one who observes him in a long conversation, can know how to esteem and value him as he deserves.

The English are still at Gillelye, where they land peaceably and purchase fresh provisions.

Gun-boats are to be stationed in the intervals between our block-ships; and it is asserted that it is impossible to storm the island-batteries. The whole line of defence will be ready. The wind is west.

Copenhagen, March 31, 1801.

I must announce to you (as the fact is undisputed) that the English fleet is now stationed in a hostile attitude before our harbor, where, favored by a wind that suddenly sprang up from the north, they cast anchor about ten o'clock yesterday morning. At Cronberg, though the wind allowed them to keep out of the reach of the guns of the fortress, a brisk cannonade was nevertheless kept up as they passed. It began about seven o'clock and lasted till half-past nine. They have attempted no farther hostilities against our works, except detaching some frigates and a cutter, apparently to make soundings, which, however, rapidly withdrew again, after some shots had been fired at them. Towards evening, they went through some evolutions, from which we expected an attack or bombardment; nothing, however, came of it, and as yet all is quiet. During last night, they sent a few sloops to plunder near the fishing-village of Skogshoved, close by Seelust. They were, however, hindered from effecting a landing by our light infantry.

I am too tired, and the time is too far advanced,

* Schonen, a province of Sweden, east of the Sound.—T.

for me to go out, in order to collect farther intelligence. Yesterday, I had no end of running about to get a view from high houses, towers, &c.; then, twice I had the long distance to Schimmelmann's, and back to my office, where one is obliged to lay aside all thoughts of self. I was knocked up, like any poor soldier. Since we expected an attack in the night, I wished to remain there. But, alas! Amelia could not keep herself from thence; and this has hurt her eyes. She entreats and caresses me until I give way, and then repent; for what I foresaw followed.

On Sunday morning, the English admiral sent notice that he should have recourse to hostilities.

Copenhagen, April 3, 1801.

The report of the bad success of our line of defence, has doubtless reached you, ere you get this letter. It was on Wednesday afternoon, at about five o'clock, that the alarm was sounded, in consequence of the movements of the English fleet. Fifteen of them, Nelson's division, (though I do not pretend to entire accuracy, especially as to numbers,) moved southwards, and took their station to the south of the right wing of our defensive line. It had been asserted (and according to the maritime charts it could not well be thought otherwise) that such an attempt of passing by our whole line could not be made without encountering their united fire. I do not understand how it was that not a shot struck them; and the reason given is, that they were beyond the range of our guns. I fancied, therefore, that they must have passed between the Saltholm ground and the Swedish coast; but found, however, that this would not agree with the other accounts. By this time, it became clear enough that they would not make the attack upon our whole line, as was expected. Yet people built upon this, and consoled themselves with the assurance that our line, which was drawn out so far in that direction, could instantaneously be filled up and strengthened; and one man thought that the shallowness of the bed of the sea would place insuperable difficulties in the way of the enemy; and another (though of this I doubted) affirmed that the bastion, No. 5, and the others at the Holme, would be able to keep them in check.

When, therefore, yesterday morning, about eleven o'clock, the firing commenced with sudden violence, (the only thing which could apprise us of what was impending,) we were affected, but still of good courage. We had imagined it would be so much more terrible, and therefore believed not the attack to be so furious or so general as it really was. I went to my office full of anxiety, in order to pack up the archives. On my way, and in my office, I heard all kinds of reports—of two, three, and more English ships, which were said to have run aground, and to be firing so furiously, to prevent us from boarding them. Meanwhile, the cannonading increased with redoubled rage, till, about half-past two, it became quite faint, and only single shots were discharged. I now went out again to get intelligence. There was a dead stillness in the streets, and one could hear the hollow sounds of the single shots. Occasionally I heard an officer talking with a citizen of a shell which had fallen and exploded near him. At the next corner, some people had crowded together to read a placard issued by the chief of the police, which contained instructions how to conduct themselves during a bombardment. I now turned homewards, tolerably alarmed, and could

hear the single discharges which, without the possibility of a mistake, were caused by the throwing of shells. Again I went out, and last of all to Schimmelmann, who had just been speaking to one of the admiralty, and was full of deep anxiety. Presently came Herr Von S. with the intelligence that our block-ships on the right wing were knocked to pieces. I have never before been so shocked. I returned home, and told Amelia only a part of the misfortune. I soon came back again, and heard that a flag of truce had been sent from Nelson's fleet, and was the cause of the incomprehensible cessation of the enemy's firing. I learnt, moreover, details of the fight which were in the highest degree affecting. The whole city was in a state of consternation and desertion.

April 4.—During the deficiency of information out of which a connected narrative of the battle could be formed, and because our condition would interest you even more than occurrences of this ever-memorable day, I intended yesterday to write to you, first of all, of that condition, and to collect more materials for the other to-day.

You shall have the proper history of the fight, as soon as I am sufficiently acquainted with it; to-day probably I can send only some detached features of it. We cannot deny it, we are entirely beaten. Our line of defence is destroyed, and we have everything at stake, without any apparent chance of winning anything, and without being able to cause the enemy any great harm, as long as he is satisfied with throwing shells at us, especially at the docks and the fleet laid up there; and all this because we have been deceived in our projected plan of defence! But if we are obliged to look with troubled anxiety on the danger, and with dissatisfaction on the authors of the failure, so the very exemplary heroism which our people displayed, cheers us. It gives us a melancholy pleasure, and full of love. It does not, indeed, console us for the state, nor so satisfy us as to deceive us concerning our situation; but still it binds us to our nation, and makes us contented to suffer with it. Such a resistance was never seen before. Nelson himself has confessed, that in all the battles in which he has been present, he never saw anything that could be compared with it. His loss must have been greater than at Aboukir. It is a battle that may be compared with Thermopylæ: but Thermopylæ opened Greece to devastation!

On our right wing lay a line of block-ships; that is, the hulks of old men-of-war which were become unfit for service, but could be made use of as batteries. These had been manned with sailors and volunteers, for working the guns. We were so deficient in sailors, that we had not been able to station our regular fleet there, which, if completely fitted out, would have left no doubt about the victory in a battle fought as this has been.

The Proevesteen, Captain Lassen, of 90 guns, (but these block-ships can make use of only one side of the vessel;) the Vagriën, Captain Riesbrigh; the Jytland, Captain Brand; the Infodsretten, Captain Thura; the Siatland, whose captain's name I am not certain about;—these five vessels seem to have supported the attack of Nelson's whole division, consisting of twelve ships of the line and several 54-gun vessels, among which, according to all appearance, the formidable Glatton, with its 68-pound carronades, was in the first line. Two gun-boats, a floating battery, and the frigate St. Thomas, appear also to have been at-

tached to our line. I forgot to mention the principal block-ship, the Dannebrog, commanded by Captain Fisker. I cannot mention exactly their positions, as they succeeded one another in the Flintrenne as far as the battery of the Three Crowns. The Proevesteen lay before the interval between the battery No. 5 and the island of Amager; a battery upon this island should have supported us, but could do nothing because of its false position. The block-ships protected the dock-yard from the near approach of the bomb-vessels; they were believed to be safe from the attack of a superior force, by the want of depth in the intervening space, and they were told that they should be reinforced. But the English, from the first day of their arrival before the harbor, had caused frigates and cutters to sail and take soundings in all directions, out of the range of our cannons; they had found ways which we had never explored, and marked them out with buoys; and we, who were obliged to confine our ill-manned fleet, in its disarmed and defenceless state, to mere defensive measures, had no power to hinder them. Thus had they (especially in the night after Nelson's division had stationed itself south of the end of our right wing,) found and marked passes which no one suspected to exist; for it had been taken for granted, from the earliest times, that the bed of the channel was here too shallow. Thus it was they were able to attack the block-ships, which, in their weak state, were not, as had been expected, defended by the intervening space.

They now found themselves terribly over-matched. The Proevesteen had sometimes five ships of the line opposed to her, and, among others, Nelson's own ship, of 98 guns. Besides this, a 54-gun ship had laid itself across, and swept her deck lengthways. The English ships succeeded each other by turns, and manœuvred to and fro. Nevertheless, the fight continued from half-past ten till about half-past one o'clock, when we were conquered, that is to say annihilated.

The Proevesteen had a crew of between three and four hundred men: of these, only thirty have returned to shore. They fought for an hour and a half with only three guns, because all the rest had been rendered useless. The deck was beaten in; the planks were, as it were, flayed off their surface; the steps were so entirely shot away, that the officers let themselves up and down by ropes, to give their orders, from one part of the ship to another. There was a shower of shots in the most literal sense, especially on and around this vessel. In more than one ship the crew are said to have fought at last without any one to give the word, and pressed forward to die at their guns.

On board Captain Cofod's ship only himself and another man remained unhurt, (not that he relaxed more than those who fell.) It is said that he, finding himself with only eight men left, commanded them to cease firing; they, however, begged of him, since they could still work one gun, to be allowed to fire once more. As they were firing it, six of them were struck down, and the compression of the air from a passing shot struck him down insensible, but unhurt. Nelson's ship was stationed over against them, and they had vowed that he should remember having fought against them.

It would make it quite impossible for me to write of our fate to my parents, if, as my inclination leads me, I should go on to relate to you much more of the same tendency.

As soon as our line was silenced, the English came in, and began throwing shells. This continued nearly two hours. Many of these fell in the new docks without doing any harm; one of them exploded close by the Crown Prince.

Nelson now sent in a boat, bearing a flag of truce, with a letter nearly of the following purport and form:—

“To the Danish Government.

“I have taken seven batteries, and shall be obliged to burn them, if no arrangement takes place. But I wish to spare the effusion of human blood.

“From the brave English, to their brethren the brave Danes.

“HORATIO NELSON.”

An aid-de-camp of the Crown Prince was sent to him to desire an explanation of this singular letter; and an armistice was agreed upon. This was done upon Nelson's representations, though Parker alone can properly make proposals, having been sent for this purpose. The armistice was prolonged.

The aspect of the city was terrible. Desolation everywhere, and nothing but carts loaded with effects, which people were conveying to a place of security. The stillness was like that of the grave: faces worn down with weeping; everything, in short, that could complete the expression of the still bleeding wounds of a defeat.

I can scarcely give you an idea of the bringing in of the wounded and the dead, and the scenes of lamentation around them. Amelia burst into a flood of tears when she heard the fate of the *Provesteen's* crew, among the first intelligence we received. Anguish again overpowered her when an unfounded report arrived that all thought of defence was relinquished. She feared only a hasty, dishonorable agreement.

The negotiation was proceeded with; concerning which, I can only say thus much to you, that even yesterday nothing was determined, though Nelson came ashore. The armistice continues at least till the early part of to-morrow. At all events, we must be prepared for a bombardment. The most alarming thing is that the battery of “the Three Crowns” is no longer tenable; and the enemy will hardly expose his ships of the line as long as he can bombard the docks, our fleet, and the city.

Have no fears for ourselves in case of a bombardment. Our house lies remote; and as for being captured, in the proper sense of the term, it is out of the question. Amelia's eye is but poorly to-day: in other respects she is well.

Copenhagen, April 6, 1801.

As the letter which we expected without fail has not arrived to-day, we assume, as your excuse, that you may have gone to B., for you certainly are deeply sensible what comforts letters from those whom we most love are in the anxious hours of danger. I wrote to you amidst the fury of the attack, and again in detail while melancholy and anxiety respecting the issue still hovered around us. A bombardment is still very possible, and I will write to you even when that is raging. Do not you, then, dear friend, be deficient on your part.

We hope you got my letter of Saturday; but are not without some anxiety about it, because on

account of the great pressure at the office it was delivered by the bearer at a place different from usual. It would vex us greatly should it be lost, partly on account of the authentic information contained therein, partly because it would show you how we felt at such an epoch, and because it was addressed to your heart, just as you would yourself have desired to have it.

A prolonged armistice has since been granted till now, and may probably continue a few days longer, even if an arrangement should not meanwhile be entered into; which, if it can be made without exposing us to other dangers, is most desirable for us, when we calmly reflect upon our condition since the battle of the 2d instant. You will attribute this wish to no personal motives of fear. As ‘Melis’ is so wonderfully composed; as respect for our heroic dead accompanies and sustains our every thought; as the whole nation sets such an example of courage and calm presence of mind as could perhaps be hardly ever witnessed elsewhere; and as danger is a consummate teacher; so must you not think of fear. The danger, however, is serious, in which the fleet, the dock-buildings, the arsenal, indeed all the most important structures of this city, (i. e. of the whole kingdom,) are placed, in case the enemy should bombard us from the quarter where the action was fought. This danger, I know, is not incapable of being averted: we have hitherto, from experience of their failure, learnt to think very meanly of the English bombshells; and if we are ready with means to extinguish them, then a limit may be set, as at least we may hope, to the devastation even of men glutted to the full. The issue, however, may turn out against us; and where order and activity are required to protect us, there I expect not so much from our people as where it depends on Spartan-like courage. On this point we must not blind our eyes; nor yet upon the condition of the remaining half of our defensive line, which, from a narrowness of vision, was not constructed upon the possibility of the right wing of it being destroyed; a fault which I have often in vain mentioned since last summer, while we were yet at peace. Our good destiny has just sent us a man whose authority is sufficiently great to carry his purposes into execution; and this day has certainly been made use of to remedy the evil as far as may be. But is that sufficient! and, if not—then what slaughter will a fresh attack occasion! and that without our being able to take our revenge.

Tuesday. The negotiation is still quite undecided. I dare not say anything more without abusing confidence.

It is still possible a fresh attack may be warded off: if not, it is still more fearful for us in the city than the first was. You may be sure that ‘Melis’ exerts herself to preserve presence of mind. It is grief for our people, and for the wounds which threaten the state, that mortifies us; we are afraid of a violent attack upon the remainder of our defensive line, rather than a bombardment: would that they would content themselves with that!

I feel depressed, and am not in a mood to give you a more exact account of the fight. If things are quiet you shall hear very shortly.

Dearest friend, adieu! Shall we soon again write in tranquillity! Will not the times come when these wounds are cicatrized, and we shall employ ourselves once more in our own proper

circle, in which alone we can be either happy or useful! This period will probably leave a deep impression on our whole existence.

Copenhagen, April 11, 1801.

My last letter was written under a depression of spirits which I would fain have concealed from you. It was, however, impossible; and the circumstances of our situation only contributed too much towards producing it. We expected a bombardment in the evening, which I withheld from you: we reckoned only on the chance of a respite from the violent wind that was unfavorable to the enemy. It appeared that the negotiations must be broken off. If this, and the general flight from the city towards our quarter and others that are less exposed, mortified us, and filled us with grief for the fortune of the state; so also the troubled and wild state of the elements around us has helped much to make us full of anguish.

My heart is heavy with that which I have to say to you, or should have if we could converse together.

The English changed their mind quite unexpectedly. The armistice was renewed, and on the following day Nelson came ashore to the Crown Prince. They agreed upon an armistice of greater extent, which was finally limited to fourteen weeks. We are thereby enabled to provide for Norway, which is suffering from want almost to starvation. We do not disarm; though the landwehr are dismissed to their field-labors.

The great loss of the enemy is proved, without question, by the terms of the agreement, which are not very advantageous to him. He is only enabled by it to sail away when he chooses, and as he can. They will hardly carry back all their ships. Parker's son is said to have fallen. Nelson has lost three captains, (two of them fought with him at Aboukir,) and on board the Elephant, his own ship, the captain, two lieutenants, and 117 men. Another English vessel is reported to have had 230 killed. Two English ships of the line struck, but could not be taken.

We have, therefore, I think, gained honor and respect throughout Europe, as well as a stronger bond of esteem and love for the whole kingdom.

I wish that the intelligence of the armistice could have followed close upon my last letter: for your anxiety afflicts us. We were prepared for every event. We might lose all that we had—that is to be reckoned as nothing in such a danger of our father-land; and, indeed, the danger, as it increased, raised us to higher degrees of courage. Should, therefore, the danger return, be not too anxious about us. We willingly remained where we were; and would, at no price, have sought for our individual security.

Farewell! The time allows me to say no more. Pray, write to us; you give us thereby so much pleasure. Amelia's eye is but poorly.

Copenhagen, April 14, 1801.

The armistice that has been concluded for Denmark restores us again to our accustomed relations during its continuance. Every event of importance, however, shall still be made the occasion of a letter extraordinary.

You know the particulars of the armistice from the newspapers. * * * I now send you some intelligence concerning the enemy, and of our own dear people.

On Sunday, a division of fourteen sails, moved off towards the sound. It was said their object was to take in water at Helsingoer, because that which had hitherto been fetched from Hveen had caused a dysentery. Others, however, conjecture that they might be destined against Gotheburg. It was announced yesterday from Helsingoer that three large English vessels, (probably hospital ships, that is, some that had been disabled in the engagement, which are generally used for that purpose,) have passed through the sound.

Several days before, the English had despatched two frigates and a cutter towards the Baltic. Yesterday, almost all the rest of their fleet took their departure hence; and they are lying to-day near the height of Castrup.

We are still in complete uncertainty as to the degree of influence which the present government of Russia will have upon our peace. Nelson was apprized of the death of the Emperor Paul. The question now is, whether he will, nevertheless, turn his arms against Russia, (though, at present, certainly the ice excludes the attempt,) or first of all against equivocating Sweden. At Carlserona, however, he cannot, according to appearance, effect anything.

Our officers assert that the enemy have burnt several of their own disabled ships; more are said to have been thus burnt than they have captured from us. Their loss is reported to amount to 2000 men, killed and wounded. They have received many shots below water-mark. They can tow none of our ships home with them: on that point our captains rejoice. During the fight Nelson was furious at the opposition he encountered, and paced up and down the deck, cursing and swearing at us.

It is affirmed as a fact, that three English ships which were stationed near the Three Crown battery, were in such a state, one with another, at the time when Nelson offered the armistice and the firing was obliged to cease, that they must have been lost, without any chance of delivery, had the contest been continued, and that two of them had already struck their flags. Had the Three Crowns battery been in such a state as it now is, and had the fight been prolonged against these battered English ships, it is thought they would have been captured, and so the evening of the action might still probably have turned out fine. Magnanimity had nothing to do with Nelson's proposal for an armistice. It is very probable that he had begun the attack without instructions from his superior in command.

One of our lieutenants, only seventeen years old, (I believe his name is Willemose,) has gained very distinguished honor in the command of the floating battery. He took his station over against Nelson, and with the greatest sang-froid constantly aimed his guns at the rudder of his ship. His battery was at last silenced; he brought it back, however, in safety. It is already put into condition, and given to him again. Yesterday, all the officers belonging to the line of defence were invited to the king's table: this young man excused himself from coming, preferring to remain at his post with his battery. Nelson expressed a desire to see him, as he had particularly attracted his attention.

I have seen Captain Lussen of the Proevestein; and I have agreed, with the chamberlain, Bille, and others, to dine in company with the officers. I hope then still to learn many particulars of the

engagement. A plan of our line and of the action has been promised me; which you also shall one day see. Our barbarous enemies loaded their guns with nails.*

We can, as yet, think of nothing else.

From the Britannia.

Memoirs of Sophia Dorothea, Consort of George I.
2 vols. Colburn.

UNDOUBTEDLY we should find these volumes very amusing if we could persuade ourselves to take an interest in the wretched intrigues of the petty and corrupt courts of Germany a century and a half ago. We have here full details of shameless vice, and infamous characters, and horrible scandal, of which our knowledge, we must confess, was previously very imperfect. We freely give the author credit for industry; but we must wonder at the taste which could delight in collecting the materials out of which this work has been formed.

It is known that Sophia Dorothea, the consort of George I. when Crown Prince of Hanover, was divorced from him before he succeeded to the crown of Great Britain, and was confined for thirty-two years in the province of Ahlden. It is affirmed on one side that she was guilty of adultery, and on the other that the charge was only brought forward by the mistresses and creatures of her husband to excuse his brutality towards her. The point has been warmly contested between Jacobites and Hanoverians, and all the circumstances connected with the divorce have been so exaggerated that it is now difficult, if not impossible, to arrive at the truth. The author of this book, like most others who have written on the subject, is a violent partisan, and without, in the least, assisting us to facts that might lead to a correct conclusion, launches out into unbounded panegyric of the princess and unbounded abuse of the elector.

Sophia Dorothea was the daughter of the Duke of Zelle, by a left-handed marriage with Eleanore Marquise d'Olbruese. These German left-handed marriages are convenient. They satisfy the scruples of conscience without entailing any legal consequences. They are good in the eye of the church, but they are nothing in the eye of the law. The duke was, however, so well pleased with his wife, that after some years he married her legally as well as ecclesiastically; and the only surviving child by this union, Sophia Dorothea, became heiress to her father's dominions.

In her childhood she was intimate with the celebrated Count Königsmark, and report affirmed that when of a proper age they would most probably be united. But more ambitious views for his daughter opened to the duke, and she was ultimately wedded to George Lewis, then Crown Prince of Hanover. The union took place in 1682, and for some years the royal pair lived quietly together, if not happily, their children forming, probably, a bond of union much more potent than mutual affection. The court of Hanover seems to have been corrupt enough, but the curtain that time has cast over its disreputable intrigues shall be sacred to us. The differences between the prince and his princess came to an open rupture in 1694, the latter having recourse to a sharp tongue and the former to a strong arm.

* This calumny, and what is said of Nelson's undignified behavior, &c., may be accounted for (and forgiven) from the natural irritation of the moment.—Translator.

Sophia Dorothea left Hanover to return to her parents, but they sent her back to her husband again. Recriminations became sharper than ever; and, after some months of wrangle, the princess determined to escape, and make Königsmark the companion of her flight. On the evening previous to the day fixed for her departure, she had a long interview with him. On leaving her presence he was arrested by four guards, but resisting, and drawing his sword, a scuffle ensued in which he was slain. Subsequently the Crown Prince obtained a divorce from the princess, she being a willing party to the separation. The rank of the parties rendered it undesirable that any scandalous matter should come before the court, and the divorce was granted on the ground of mutual disinclination. The princess was conveyed to the castle of Ahlden, in the duchy of Zelle, where she was allowed to rule the province at her pleasure, and to retain the semblance of royal state; but precautions were taken to prevent her escape. Thus she passed the last thirty-two years of her life, neither her parents, nor her daughter, the Queen of Prussia, appearing to sympathize with her complaints, or to have any wish to see her at liberty.

It pleases the author of this book to make her the heroine of a romance. We have her beauty, her talents, and her virtue celebrated in florid terms; and we are favored with a kind of diary which she kept of the chief events of her life, thrown into the form of dramatic dialogue, together with the narrative of one of her attached attendants, Madame Knesbeck. The latter is instructive, though not pleasing, and enables us to form a shrewd guess of the relations that subsisted between the princess and the Count Königsmark.

This count was the brother of that Charles John Königsmark who was tried at the Old Bailey for the murder of Mr. Thomas Thynn, and who owed his escape rather to his rank and family than to any doubt that could be entertained of his guilt. Philip seems to have been as dissolute and as adventurous as his brother. When at the court of Hanover he had an intrigue with the Countess Platen, a lady high in favor; and the contest between this dame and Princess Sophia Dorothea for his heart—the term is profaned in speaking of such intercourse; we should say for his *attentions*—was at last the cause of his death. Madame Knesbeck frankly lets us observe the relations between these parties in her narrative:—

“One year, during the carnival, among other diversions, there was given a ball, which was attended by the court. On this occasion young Königsmark exhibited such astonishing skill and expertness in dancing, that he excited the admiration of everybody, and of the Countess Platen in particular. She did not hesitate to go up to him before all present, and to pay him the highest compliments on his performance, declaring that she was surprised and fascinated, and begging him, when the assembly was over, to call upon her.

“This her command was more agreeable, because he hoped in the house of Countess Platen to pick up something with which he could afterwards entertain and divert our princess. When the Countess Platen found herself alone with him in her house, she revealed her passion to him without reserve, and at the same time employed such allurements that he, a young man, fond of pleasure, and not scrupling to enjoy it, was ready in all things to comply with her wishes.

"He made no secret of this to the princess when he next came to see her, and, as she was no friend to Countess Platen, it amused her to converse about her vicious courses with Königsmark and me. He was required to relate to her circumstantially all that afterwards passed between him and Platen; and it is very possible, as this gave Königsmark frequent occasion to be with my princess, that he sometimes added fictitious circumstances which had never happened, that he might miss no opportunity of being in her company.

"The beautiful Countess Platen, closely watching the movements of her new paramour, discovered his frequent visits to the princess, and soon betrayed symptoms of jealousy to Königsmark, and ordered him to discontinue his calls on the princess. When he informed the princess of this, it suggested to her the advice that, in order to escape the persecution of the countess, Königsmark should obey her, and abstain from frequenting the society of the princess.

"Hard as this course appeared to him, it was found to be absolutely necessary. But in order not to be entirely deprived of this agreeable conversation, which could not now be carried on verbally, it was transformed into a written one, so that scarcely a day passed without letters from Königsmark, or from the princess to him; and I was obliged to serve for the channel through which they were transmitted."

The princess' intimacy with so confirmed a libertine as this Königsmark, and her taste for the details of his amours, are hardly consistent with the idea of her purity. We pass over notices of some disgusting conversations between Königsmark and the Countess Platen. Fearing their intrigue might be discovered, she proposed to him to marry her daughter, but this the count refused, and thus, it is said, incurred her hatred. Madame Kneesebeck's friendly narrative is equally explicit concerning the conduct of the princess on her return to Hanover, after fruitless appeal to her father, and on her preparations for flight with Königsmark:—

"As this disconsolate princess was not sufficiently cautious, and did not find in correspondence with Königsmark so much comfort as in conversation, he was summoned through my means to come to her quite privately; and, as on her side despair, so on his side ardent passion, suggested that the princess should leave Hanover, to escape from the tyranny which she would have to endure, and seek protection from the Duke of Wolfenbüttel, who, as she believed, would not hesitate to receive her, as he had always manifested extraordinary friendship for her.

"Count Königsmark was to attend her in this journey; he was also to furnish for the purpose the necessary funds, of which the princess was exceedingly deficient."

Previous to the arrangements made for their departure, Königsmark, it seems, went to Saxony, and openly boasted there of the favor he was in with both the princess and the Countess Platen. On his return the princess was so far from being displeased with his impudence, that she highly relished his accounts of what had passed. On the evening previous to the day fixed for flight he stayed with the princess longer, says this candid narrative, "than was prudent." The pair parted affectionately, and, while the princess was packing up her jewels in her chamber, the count was slain in an ante-room. Intelligence of his boastings had

reached the ears of the Elector of Hanover and the Duke of Zelle. His arrest was determined on, and the count, from what motive it is not difficult to say, was desperate. As little stir was made about his death, it may be assumed that the circumstances under which it took place seemed to justify it. Among his papers were found some letters of the princess, the discovery of which, says her confidant, Madame Kneesebeck, "overwhelmed her with mortal terror." In this correspondence she had "used such expressions towards Königsmark that whoever was disposed to expound them to her disadvantage might easily excite suspicion of an illicit love for that young count." Her behavior on hearing of the count's death was, it appears, equally open to suspicion. "She complained bitterly, and several times wished that, now Königsmark had died on her account, she could die too; and, as I have said, she thereby excited suspicion that she had been on terms of more than ordinary friendship with the deceased count."

Out of these circumstances the author has contrived to weave a narrative very exaggerated, but not very clear or attractive. We are told of the schemes of the Countess Platen to ruin the princess—of her conspiracy relating to an embroidered glove—of her plot to assassinate Königsmark—of her forged letter to lure him to the princess' apartments on the night of his death—and of her cruelty and treachery in trampling on his mouth in his dying agonies, that he might not avow her guilt and the princess' innocence. All these stories are so plainly fabrications that they are not worth the trouble of investigating.

In her confinement—if the princess' residence at Ahlden can be so called—she had certainly no reason to complain of severity. She was allowed to manage the affairs of the province as she pleased—to maintain an extensive correspondence—to enjoy her personal liberty within the limits of the domain—and to keep up a large establishment. Her *suite*, we learn from the author, consisted of a governor, a gentleman in waiting, and two or three ladies. Her household was composed of two pages, two valets, three cooks, a baker, a butler, a confectioner, a head groom with several subordinates, a coachman, fourteen footmen, and a proportionate number of female domestics. Of her manner of life we are told:—

"The Duchess of Ahlden, as she was now styled, endeavored to occupy her mind with every kind of employment that presented itself. Among these were the administration of the estates that produced her income, her correspondence, her diary, to which we shall presently allude more at length, and the direction of her household. The instructions for her head cook and butler, her daily bills of fare for her meals, were all written by herself; and she concluded all contracts. But a great part of her time was passed in a course of active benevolence, and in the most zealous attention to her religious duties. She proved herself a blessing to the whole neighborhood—improved their dwellings, interested herself in the instruction of the children of the poor laborers, and sought to ameliorate their condition by every means in her power."

If this account be true, it must be matter of satisfaction that so bright a career of usefulness was opened to a lady whose conduct showed that, whatever might be her good qualities, discretion was not among the number. As she lived to a ripe age, it is fair to assume that her treatment

did not injuriously affect either her health or her spirits.

Of the inflated style in which the book is written, the following remarks on the princess' death afford an amusing specimen:—

"There is no record of so abominable a wrong ever having been committed even by the worst of despots. The Neros and the Caligulas were careless of human life; the monsters of the Inquisition were regardless of human suffering; the Marats and Robespierres shed seas of human blood; but, incarnate demons as they were, they tortured and they killed, and all was over. We have heard of slow fires for the victims of intolerance, and prolonged torments for criminals of state, but what executioner ever before presided over a torture that was to last for the best part of half a century? This cold-blooded atrocity, too, to be inflicted on a delicate female—a princess by birth, a wife, and a mother!

"Yet an executioner was found who went through this unparalleled cruelty with a stern determination that the most unfeeling inquisitors, and the worst of revolutionary miscreants might have envied; and he was the man whose dull heart had been warmed by the affections of his victim, who was the father of her children, and by the laws of God and man the conservator of her happiness and the guardian of her honor.

"We have had pretty specimens of royal tyranny in our Richard the Third and Henry the Eighth. Both monarchs were remarkable for their want of sympathy for their own flesh and blood. Yet their murders were, comparatively speaking, humane. The slow assassination of his wife by George the First, in infamy, stands alone and unrivalled."

After such passages as these, the most amusing portions of the work are the descriptions of George I. and "his ugly harem," which are drawn with some humor and much bitterness. If the king had possessed the discrimination of Charles II. in the choice of his mistresses, the author could have forgiven him; but that he should have remained faithful in his attachments to the corpulent Countess of Darlington, whose bulk procured her the cognomen of "the Elephant and Castle," and the shrivelled Duchess of Kendal, whose lank height gained her the title of "the Maypole," is regarded as utterly disgraceful to his taste, and wholly unpardonable.

The book has little pretensions to an historical character. The best that can be said of it is, that the author has been diligent in collecting materials which, not very engaging in themselves, have been but indifferently employed.

From the Edinburgh Philosophical Journal.

On the Rock-Nose of the Whaler, a variety of the Balena Mysticetus. By ALEXANDER H. GUERIN of Geneva, Surgeon of the Ship Supérieur. Communicated by the Author.*

It seems somewhat remarkable that an animal, apparently so very different, in many points, from the common whale, as to have deserved from the whaler a distinct name, should have escaped the notice of the many intelligent and active naturalists who have visited the Arctic Regions. We do not find it mentioned anywhere; and although Scoresby, the highest authority on the subject, tells us that the *Mysticetus* is met with in the bays

and inlets of Davis' Straits, and that there are some differences observed in different animals which might be considered as constituting them varieties, he gives no notice of any difference in their habits (*Arc. Reg.* vol. i., p. 469.) It does not appear that any other writer had even a suspicion of the Rock-nose, as it is called, being a variety.

The true *Mysticetus* is often found in the Straits, though not generally near the coast, but at a distance from the land ice, and among the heavy floating ice, known as the *middle ice*. It is not till towards the latter part of the fishing season that this whale is seen along the shore, which it then approaches on its way to the south; though some years it goes south along the edge of the middle ice, without coming near the land. The Rock-nose on the contrary, never leaves the coast, and though often, when crossing a bay, it goes from point to point or cape to cape, it as often takes a more circuitous route, and follows the shore, the whole way round the inside of the bay. In its passage south, the last mentioned whale goes either in shoals, single, or, as I have seen occasionally, in pairs, when the two seem to act in concert, coming to the surface of the water and sinking at the same instant.

There is a strange peculiarity in the habits of the Rock-nose, from which it has received its rather curious, though very expressive and appropriate name. It frequently places the extremity of its head, or nose as the whalers call it, close to the shore, upon a rock, or on the steep and stony bottom, with its spiracles, and part of its head and body above the surface of the water, and there remains perfectly motionless for several minutes. I have seen several of them in that position; and on one occasion, a pair of them, within a few feet of each other, remained as just described, for more than ten minutes. Though they were within a hundred yards of the ship, the breathing was so slow and easy, as neither to be perceived nor heard. All our boats, except the stern boat, were away; this last was immediately lowered, brought alongside, manned, and sent in chase; but still, after all these preparations, which took a long time, it was not till the harpooner stood up, with harpoon in hand, ready to strike, that the whales began to move; which they did so swiftly as to be out of sight in an instant, and were not seen again. This happened at the beginning of our long stay in Cape Seal Sound. It is the opinion of the whalers that when in this position, the Rock-nose is feeding. This, however, I can scarcely believe, as I never perceived the slightest motion of the jaws or the head of the animal; on the contrary, the whole frame, as far as could be judged by the parts above water, was perfectly motionless. I therefore think it more probable that the Rock-nose is then resting itself, being enabled by its position, to breathe more at ease, with less effort, and, consequently, be the more ready to renew its exertions either to feed or proceed farther to the south.

I have also to remark that the period of the emigration of the Rock-nose seems somewhat different from that of the true *Mysticetus*; the last-mentioned, setting out on its way south during the first fortnight of September; whilst the former does not generally appear in the lat. 66° to 69°, in any considerable numbers, till the last fortnight of the same month, and often is seen there, as late as the 8th or 10th of October. The state of the ice and weather, and the age of the individual, have,

*Mr. Guerin visited Greenland in the year 1844.

as is generally believed, considerable influence over the period of emigration of whales in general.

Having described the habits of these animals, which remain in large shoals in the bays and inlets of lat. 71° to 74° , I shall now proceed to show that there is also a considerable difference in shape between the Rock-nose and the true *Mysticetus*.

In pursuing this inquiry, I experienced considerable difficulty. It is of such importance to have the whale flensed immediately after it has been towed alongside, that it is almost impossible to allow time for actual measurement; besides, the men are generally tired, and require rest and refreshment, so that none could be found to assist in measuring, an operation which no one could possibly carry on by himself. I shall, therefore, mention the differences which struck my eye, and which, upon inquiry, I found to be the general characters by which the Rock-nose is distinguished by the whaler.

The most important point is the comparative size of the head and body. A Rock-nose of 10 feet whalebone, is, taking the extreme length of the animal, from 8 to 10 feet shorter than a true *Mysticetus* having the same length of whalebone, as it seldom reaches above 40 or 42 feet. Of this extreme length the head is always considerably more than a third; whilst, in the true *Mysticetus*, it is, as stated by Scoresby, as 16 to 51, consequently less than the third.

The whalebone is longer in comparison to the length of the animal, but the laminæ are thin for their length.

The body is broader and terminates more abruptly.

The tail seems equal in length and breadth to that of the true *Mysticetus* of the same size.

The color of the skin is a dark velvet brown, and has fewer white spots than that of the other species or variety.

The Rock-nose yields less oil, compared to the length of whalebone, than the true *Mysticetus*.

The above comparison of the two animals induces me to believe them distinct from each other; although the whalers in general seem to think that it is merely a difference of age that causes this difference in their external characters. This, however, appears to me very improbable. If we take a glance at zoology in general, we find that animals of about the same age are about the same size, when under similar circumstances. I would, therefore, be inclined to believe that two whales of the same species, of the same length of whalebone, would be of about the same age, and would present nearly the same external characters; but when we find a constant and considerable difference both in habits and form, we may, with reason, infer that the two individuals are marked varieties at least, if not different species. Besides, we generally find, among animals, that those that are fit for reproduction, or have already given birth to one or two individuals, have attained the regular proportions and the instincts belonging to that particular species. Now, as cubs or suckers are as often found among the Rock-noses as among the Middle ice whale, the former must have attained the age of maturity; as we cannot suppose that the Greenland whale can be an exception to the general rule. I cannot believe, therefore, that a number of these animals, after they have arrived at maturity, should still retain a difference in shape and

habits, confining themselves to the bays and inlets; whilst the other portion, at the same period of life, changing its instinct and shape, leaves the shore and goes to roam at 30 or 40 leagues from the coast, and that under the same latitude, the same climate, and under similar external circumstances. I therefore conclude that the Rock-nose is a distinct variety, if not a distinct species. There is no doubt that the Middle ice whale is the true *Balæna Mysticetus*; but whether or not the Rock-nose is the same species as the *Mysticetus* of the *South Sea*, is a question I am not able to decide.

PERSEVERANCE.

At one of the recent anniversaries in New York, a speaker concluded his exhortation to perseverance, by reciting the following verses:

A swallow in the Spring,
Came to our granary, and 'neath the eaves
Essayed to make a nest, and there did bring
Wet earth and straw and leaves.

Day after day she toiled,
With patient art, but ere her work was crowned
Some sad mishap the tiny fabric spoiled,
And dashed it to the ground.

She found the ruin wrought,
But not cast down, forth from the place she flew,
And with her mate, fresh earth and grasses
brought,
And built her nest anew.

But scarcely had she placed
The last soft feather on its ample floor,
When wicked hand, or chance, again laid waste,
And wrought the ruin o'er.

But still her heart she kept,
And toiled again;—and last night, hearing calls,
I looked, and lo! three little swallows slept
Within the earth-made walls.

What truth is here, O Man!
Hath Hope been smitten in its early dawn?
Have clouds o'ercast thy purpose, trust or plan?
Have FAITH, and struggle on!

Presbyterian.

THIRLWALL'S HISTORY OF GREECE, published during the last spring in numbers, makes, since it has been completed, two very compact octavo volumes of over 500 pages each. The value of this history is well established—we rank it among the very noblest contributions to a knowledge of antiquity which England has produced. Its reverend author, since the lamented death of Arnold and Mitchell, is the most distinguished of the new and liberal school of English scholarship, a school which profiting by the unbounded activity of German research bids fair to arrive at results even as yet undreamed of. To those who are unacquainted with the vast discoveries made in a region so long known, we would merely commend a comparison of this work so varied in learning, so comprehensive in philosophy, and so nice in critical inquiry, with the crudities of Gillies and Goldsmith, books which still linger in many of our schools and seminaries.—*Churchman.*